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Vol. 34 No. 1

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
— TO THE —
· CLAY · —
—· INDUSTRY·

January 15, 1909

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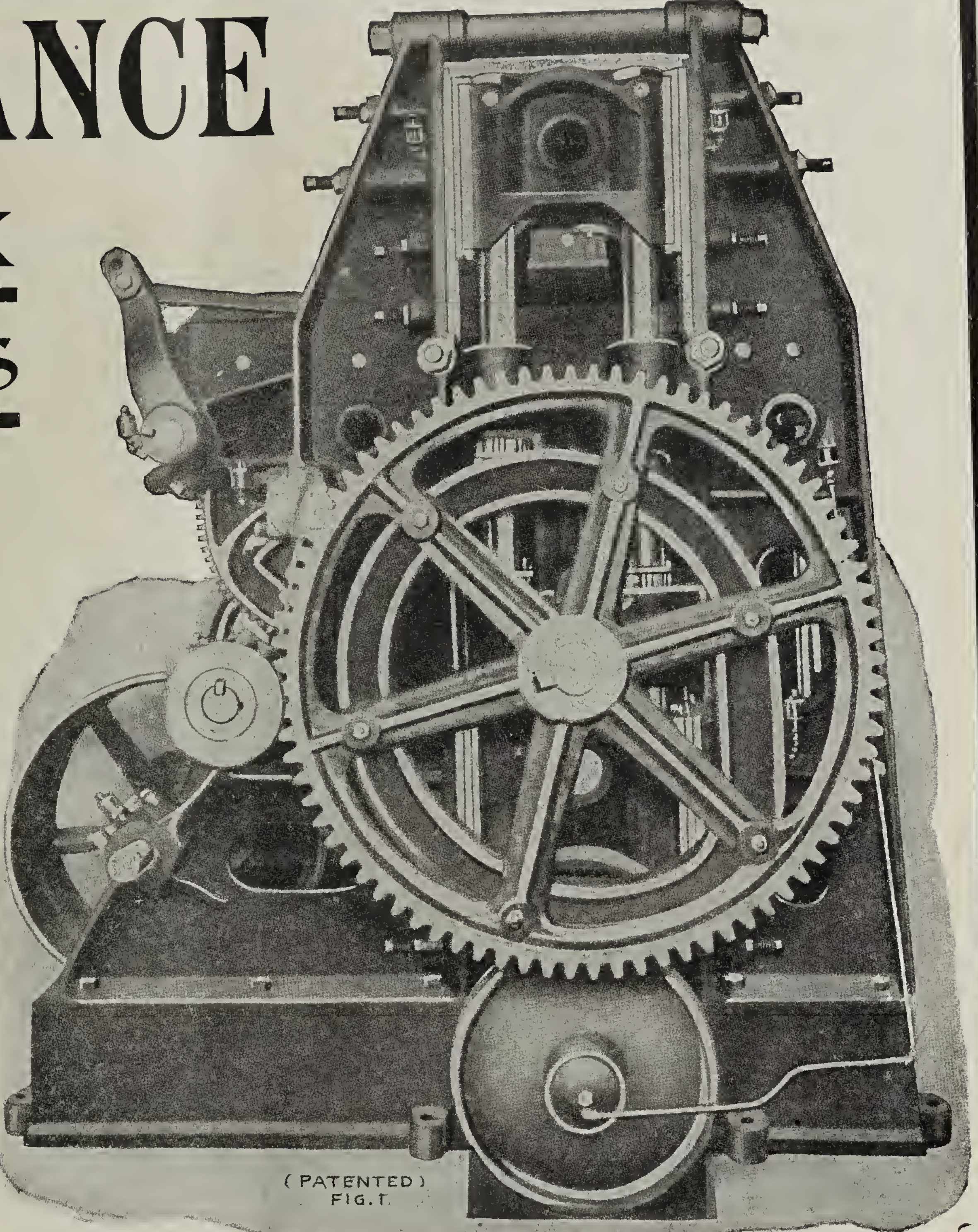
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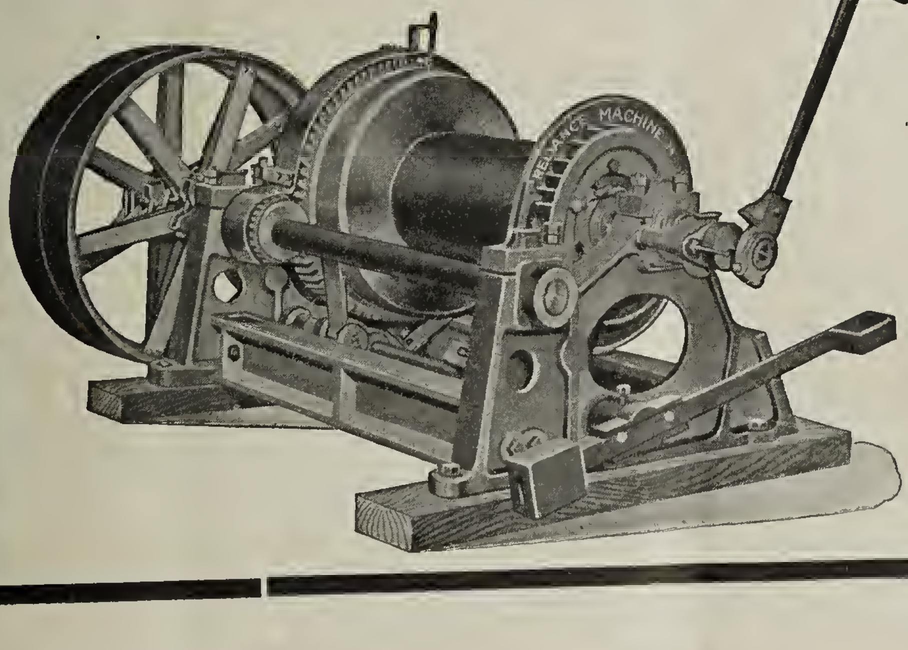

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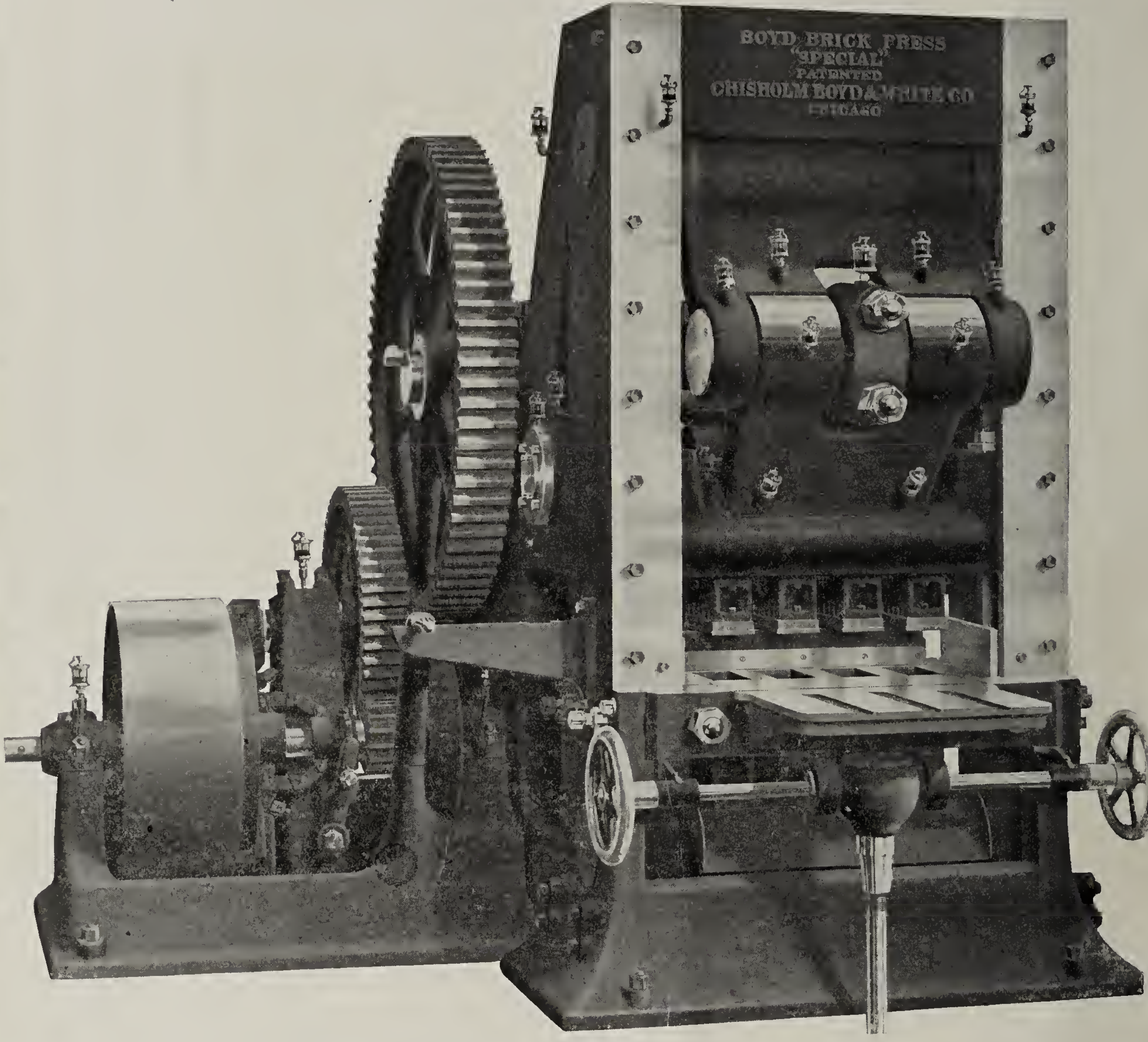

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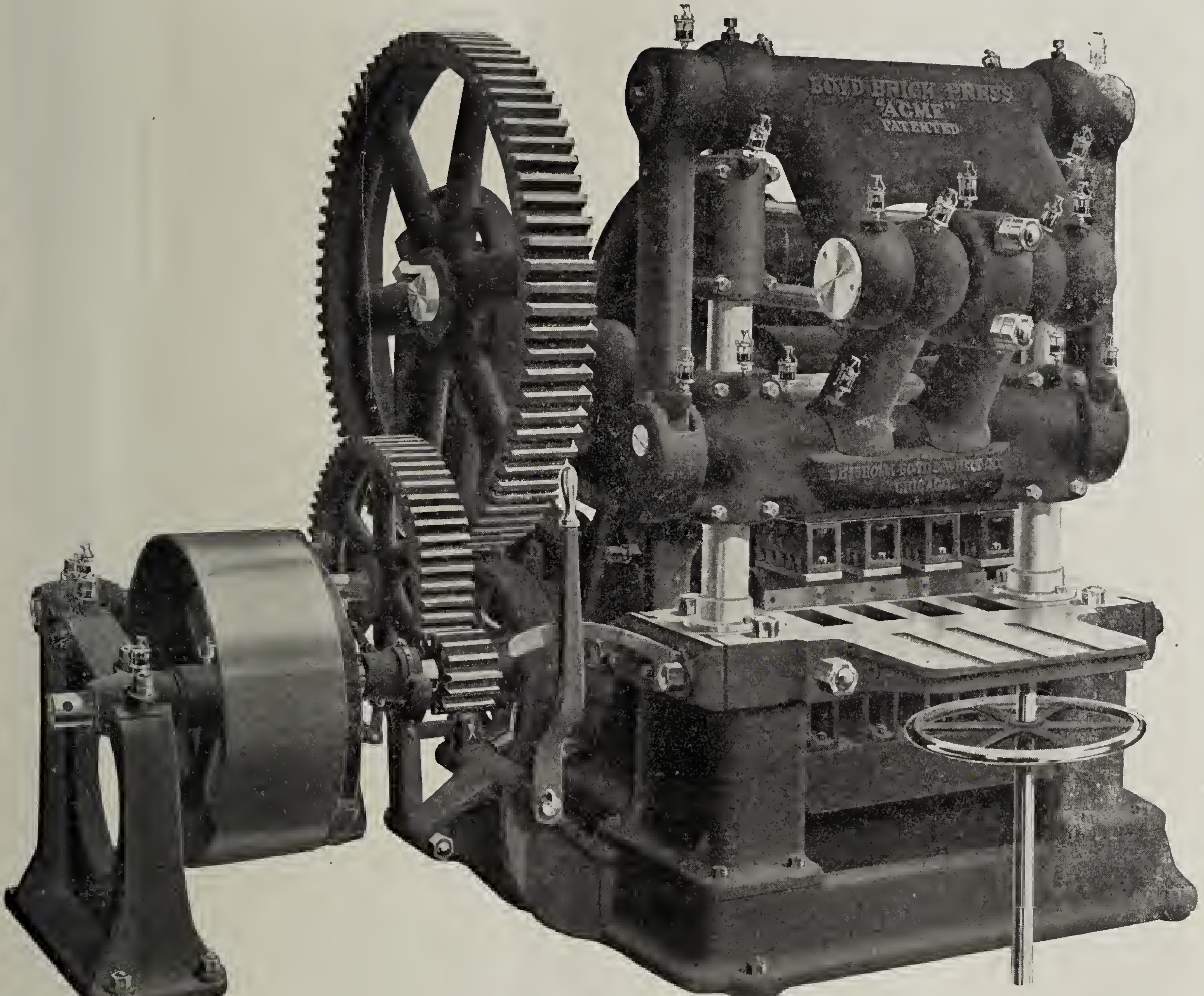

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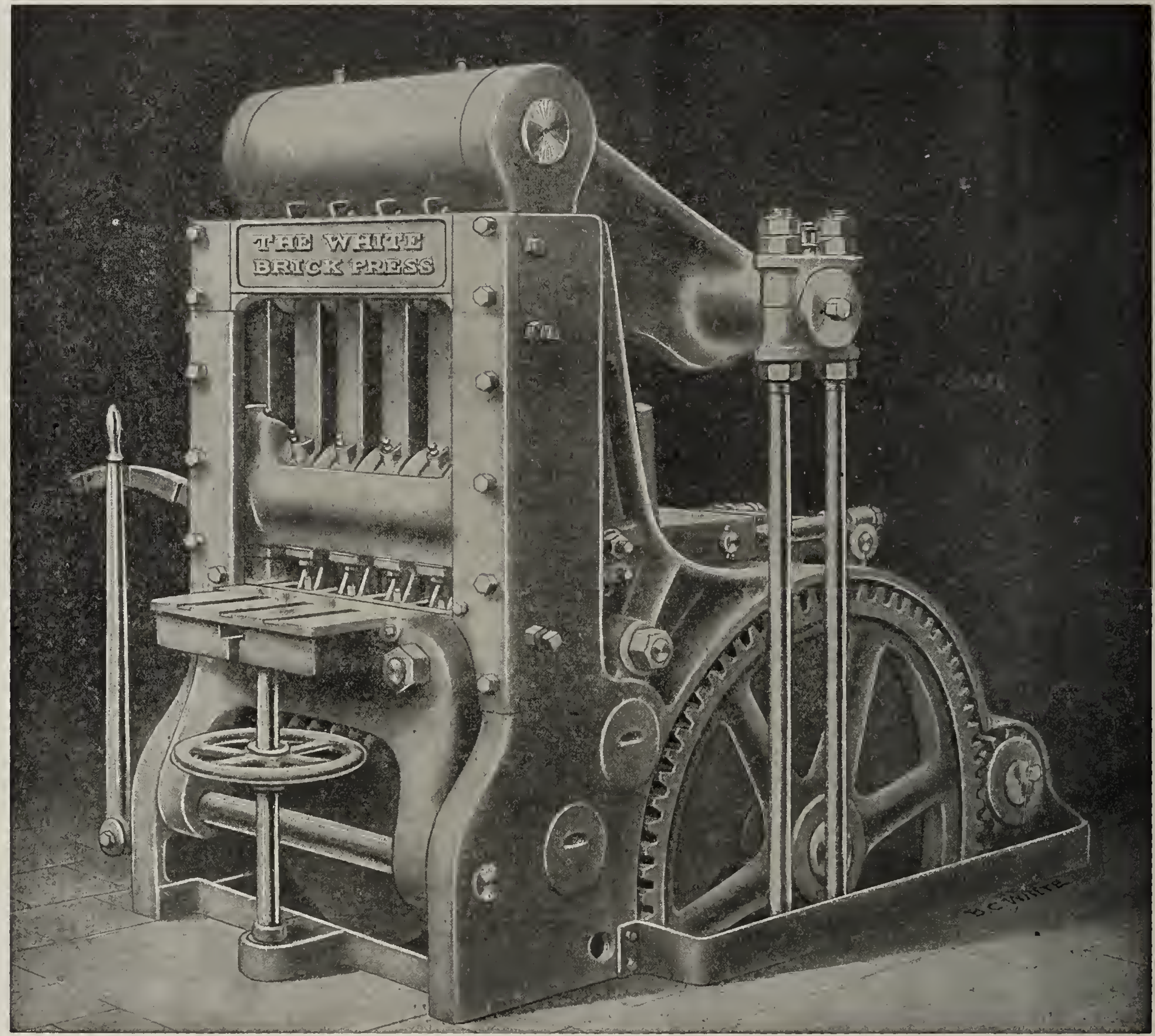

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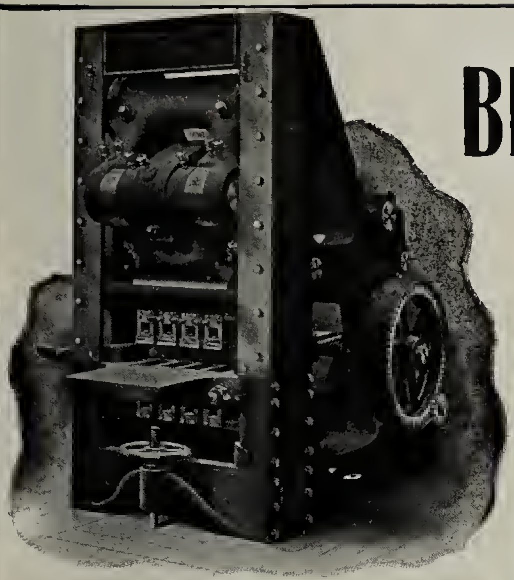

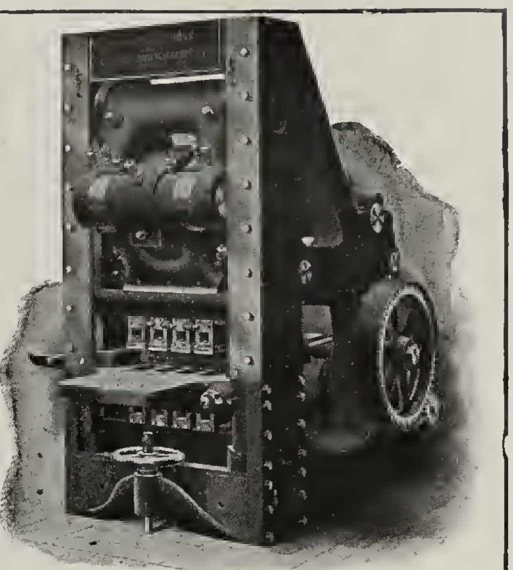

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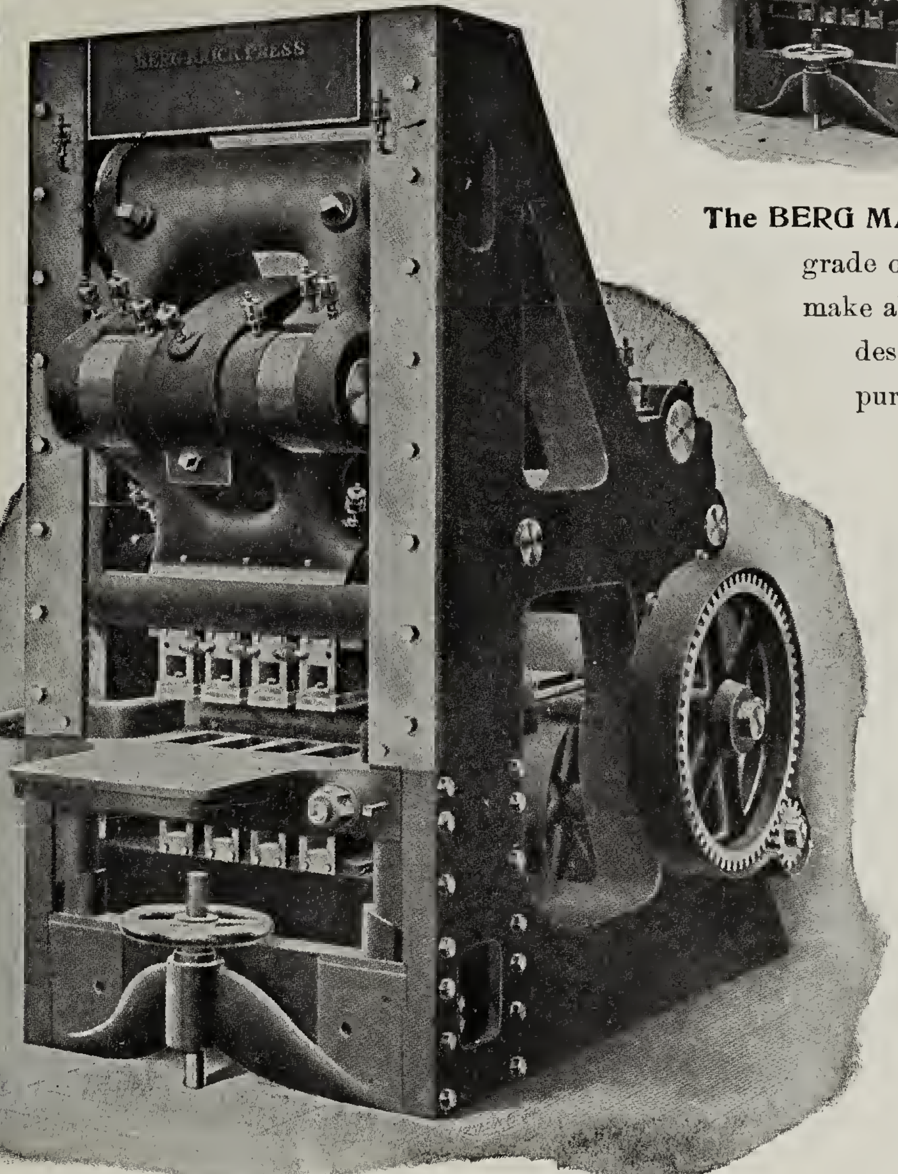

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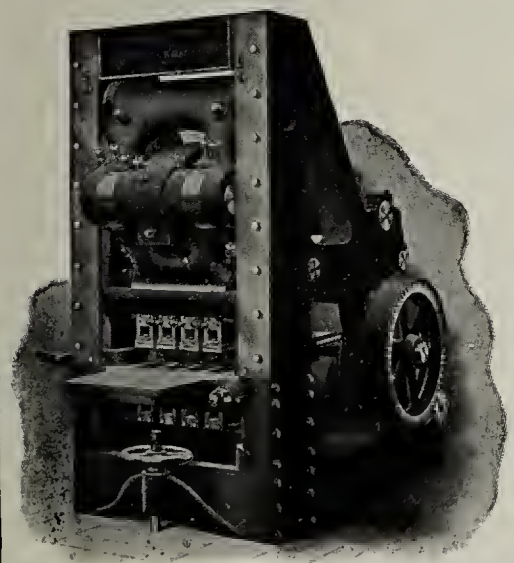

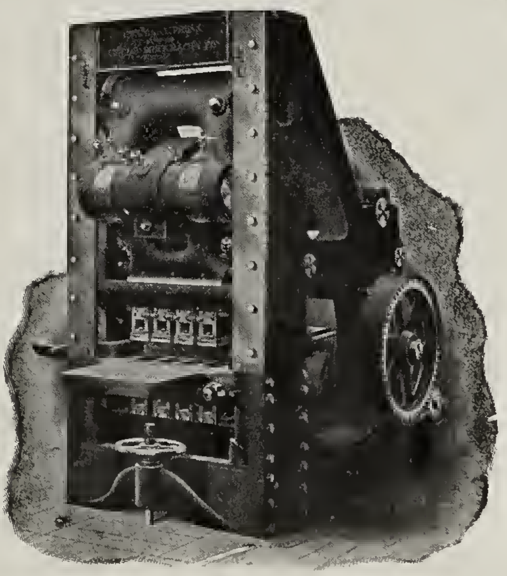

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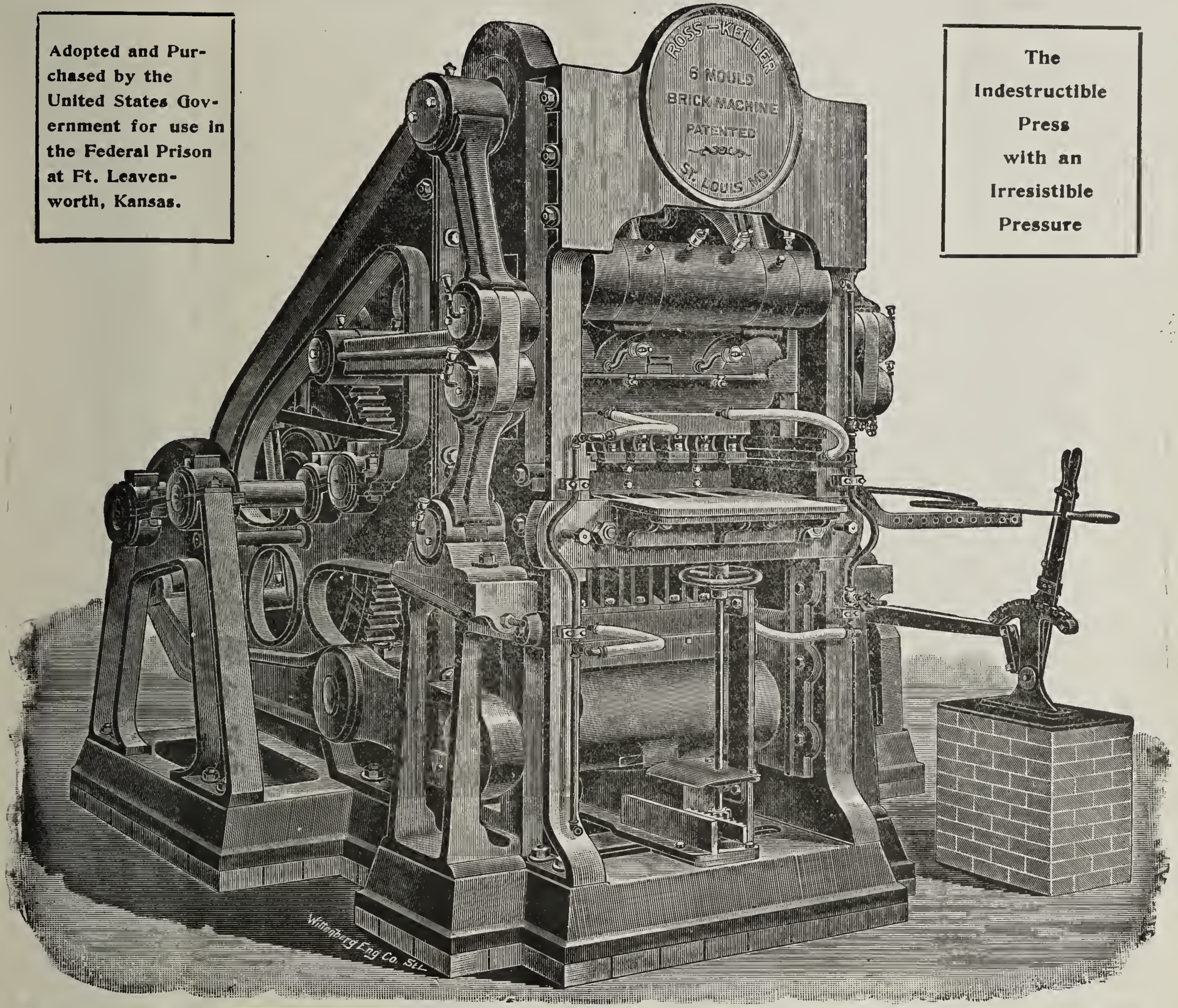

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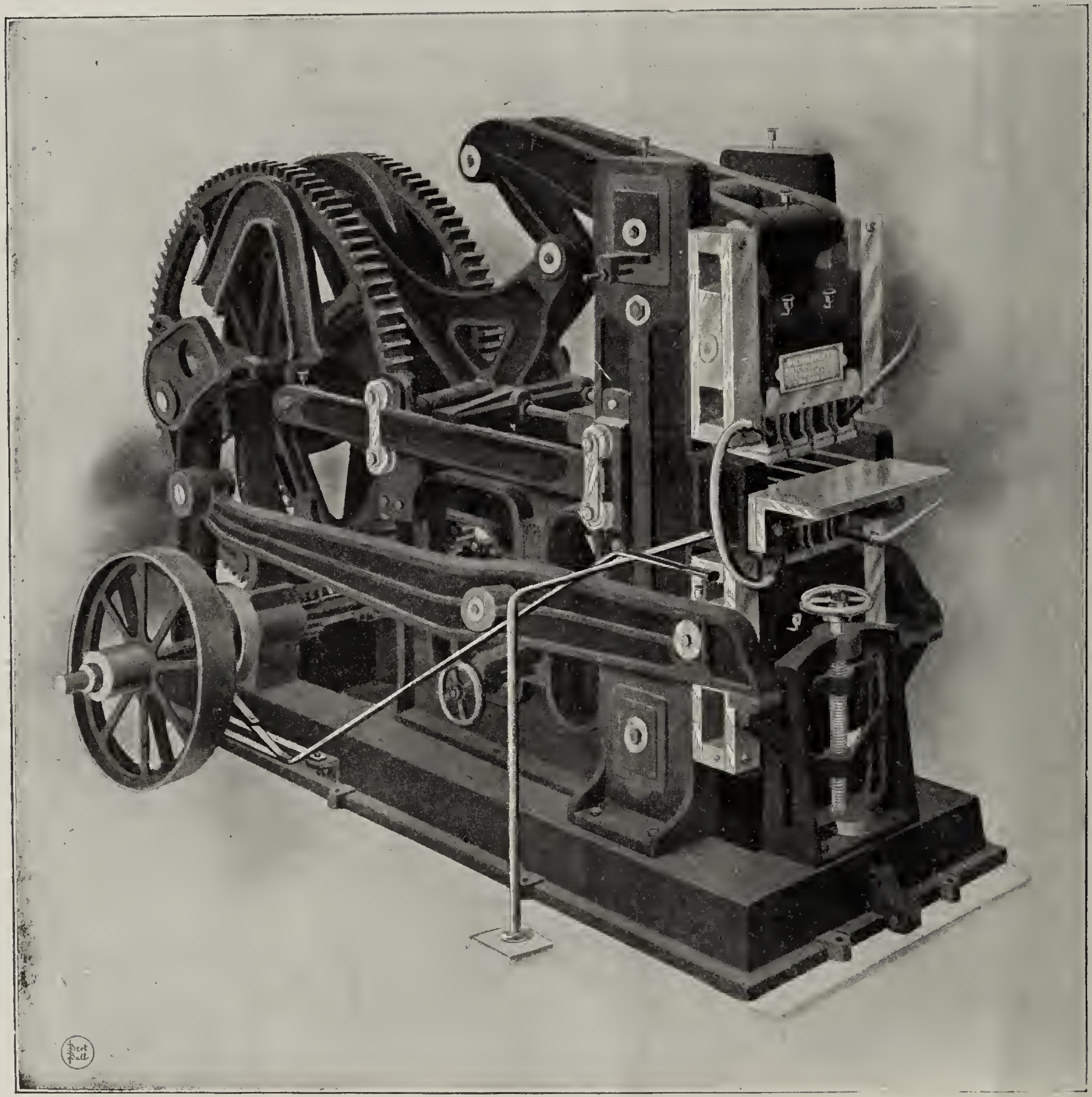

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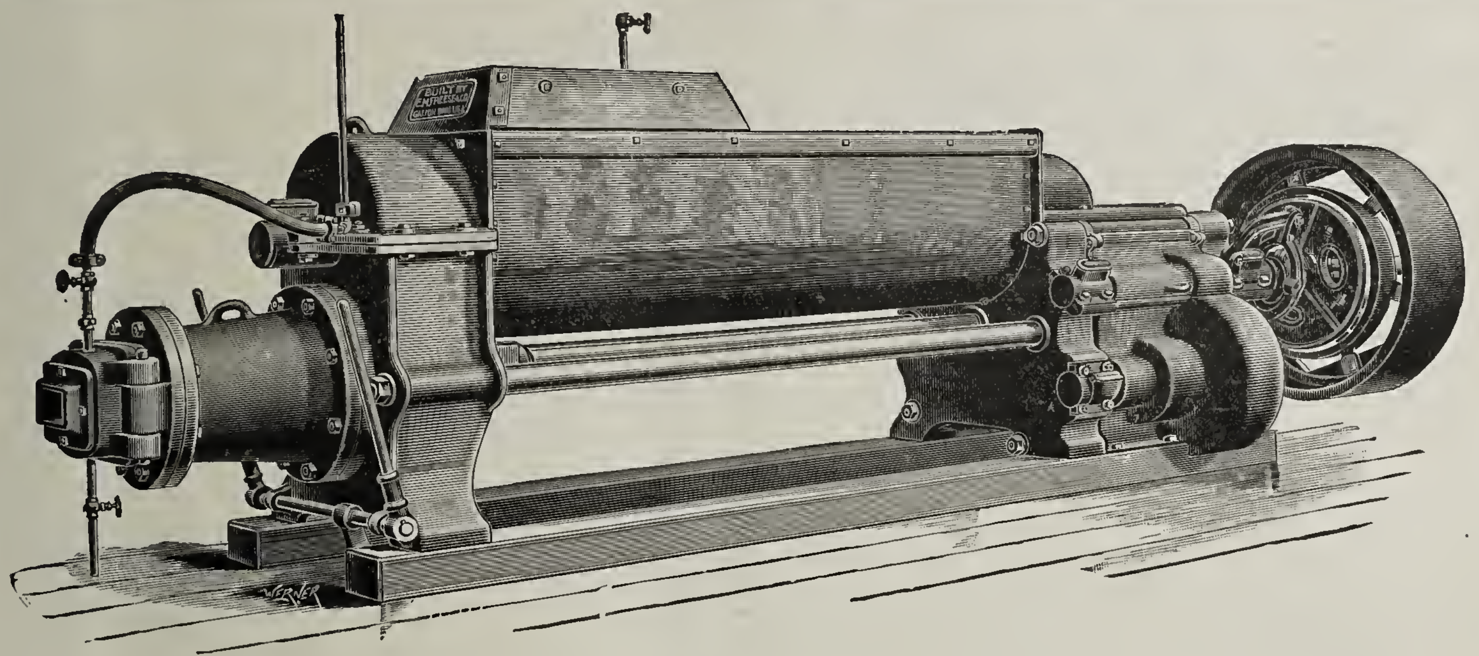

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Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

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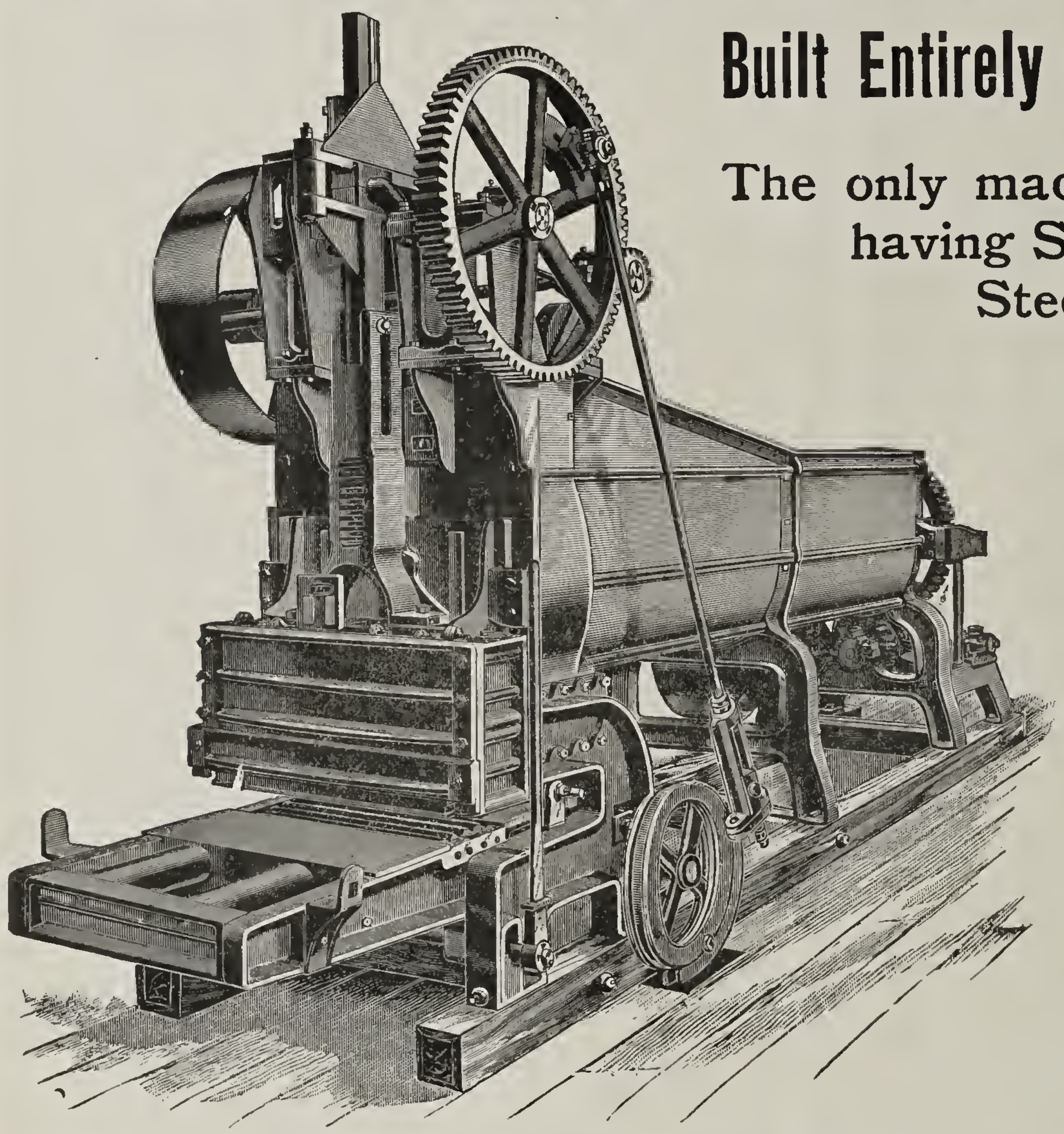

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The only machine of this class having Steel Gear and Steel Shaft.

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Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

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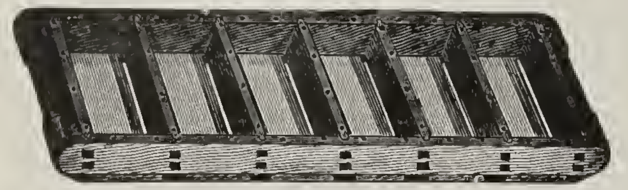

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Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

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RING OILING BEARINGS

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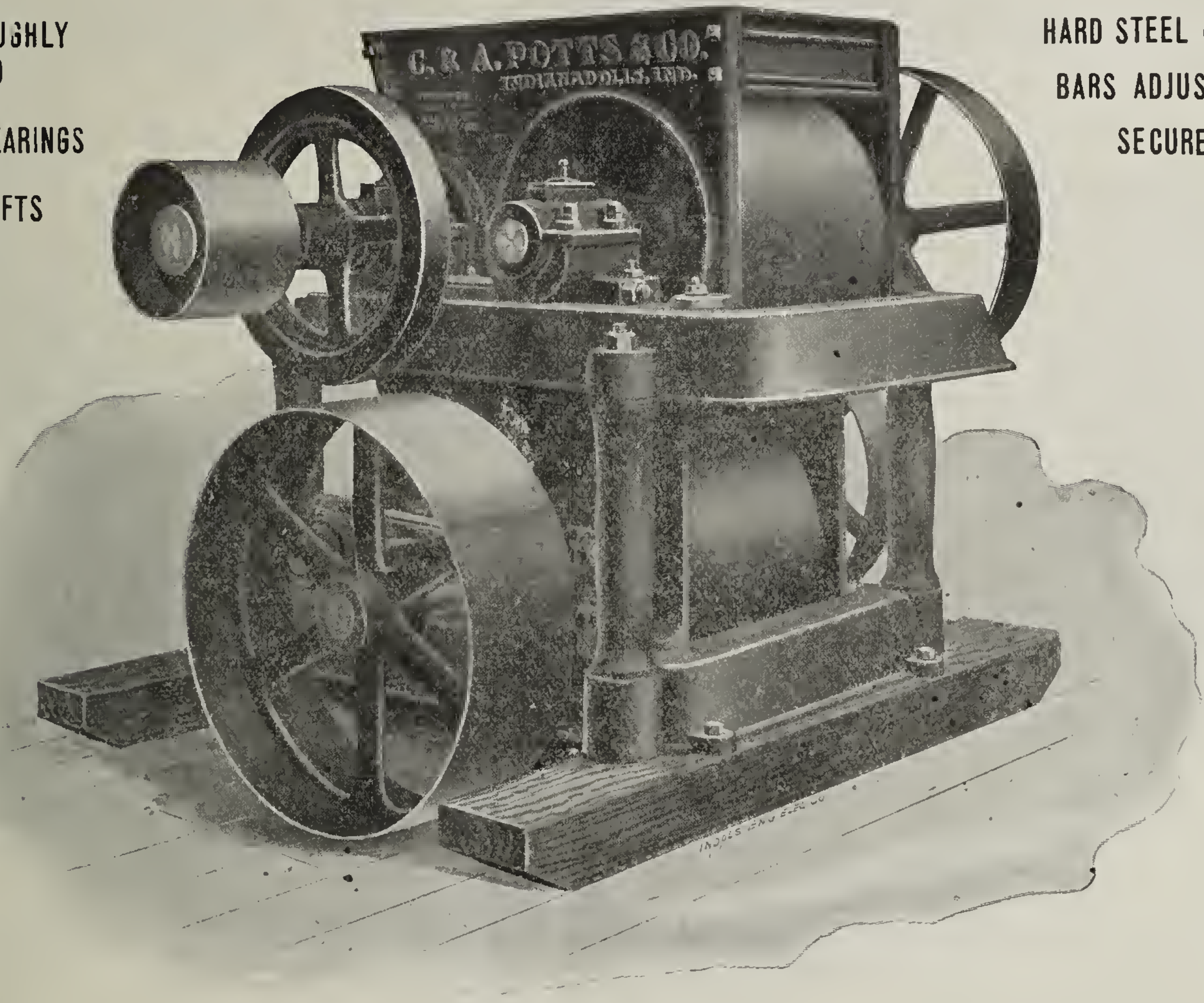

Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank. Will not choke or clog from hard, dry or wet, sticky clays. The MOST GENERALLY USED Machine on the market.

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CHICAGO IRON CLAD DRYERS
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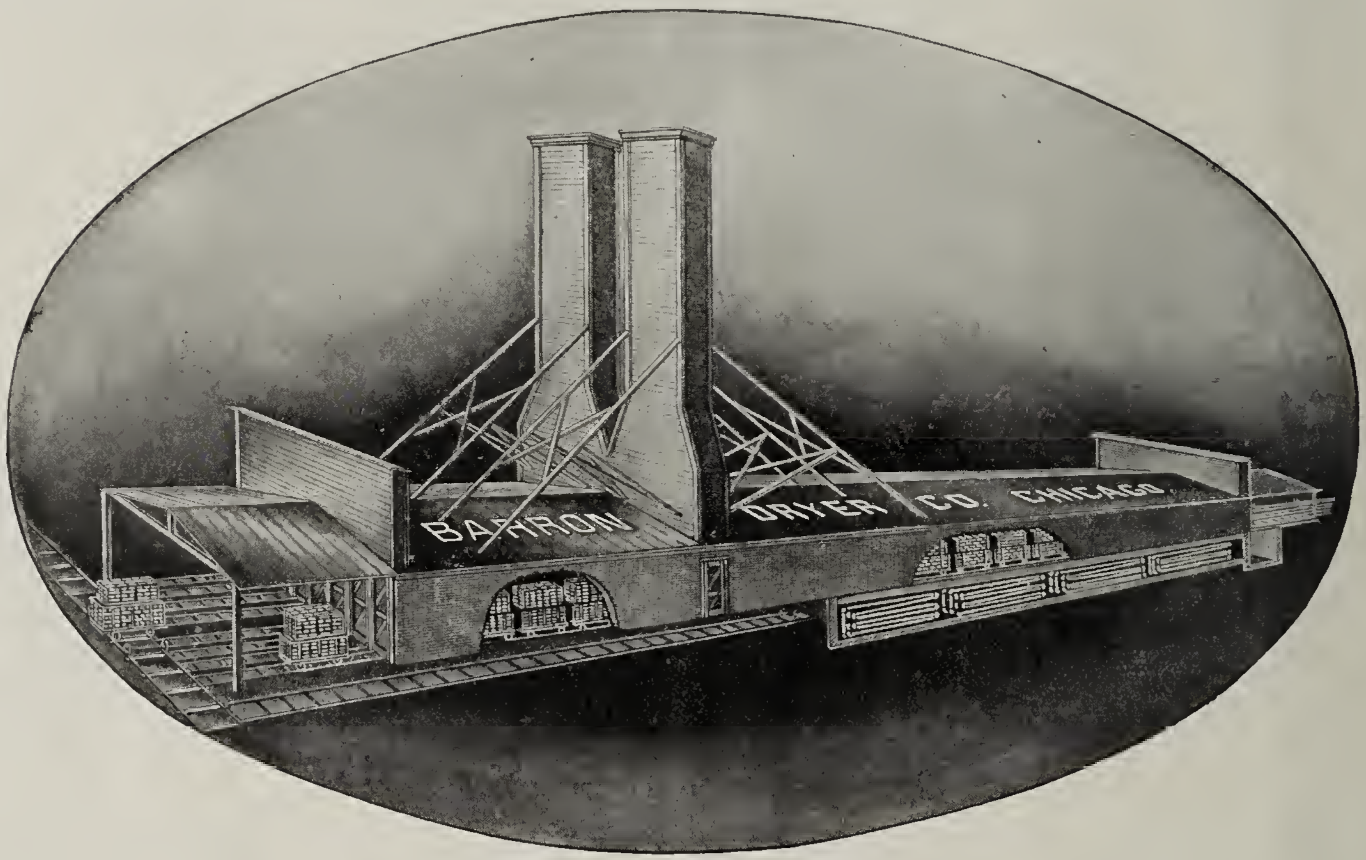

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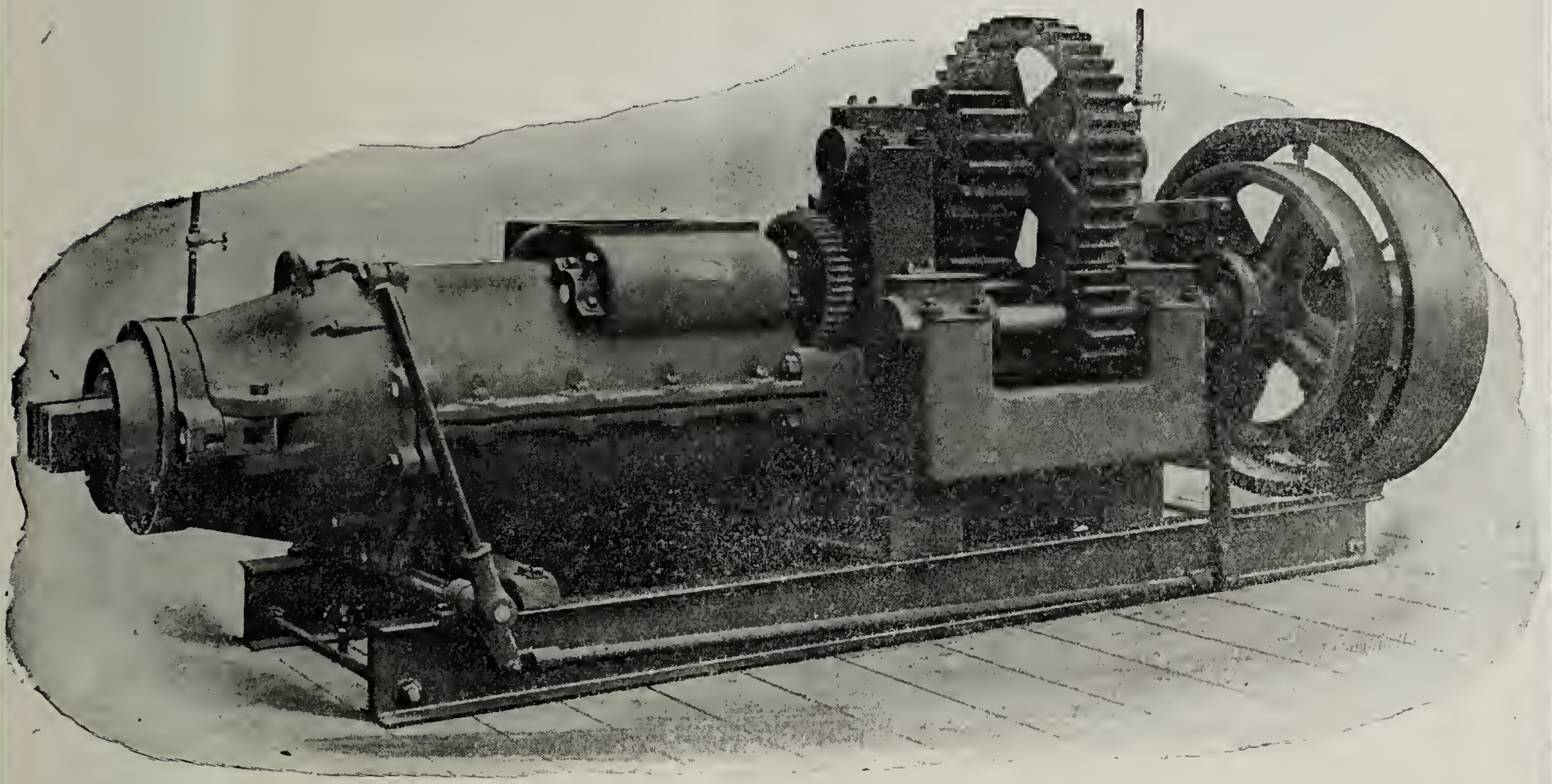

Some Features of Brewer Construction

Gear frames cast in one piece. Back thrust bearings self-oiling, self-aligning and adjustable so that wear upon the expressing screw may be taken up. Knives forged from hard, high carbon steel; each one adjustable for pitch and can be set out as it wears. Journals, self-oiling. A Feed-roll to keep the hopper clear. Mounting, upon steel I-beams, self contained.

There are three sizes ranging in weight from 5500 to 15000 pounds.

In capacity from 1000 to 5000 bricks per hour.

Our catalog shows a full line of stiff-mud clay working machines. It will be mailed upon request.

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THE GUILDER ELEVATING AND LOWERING BRICK CAR

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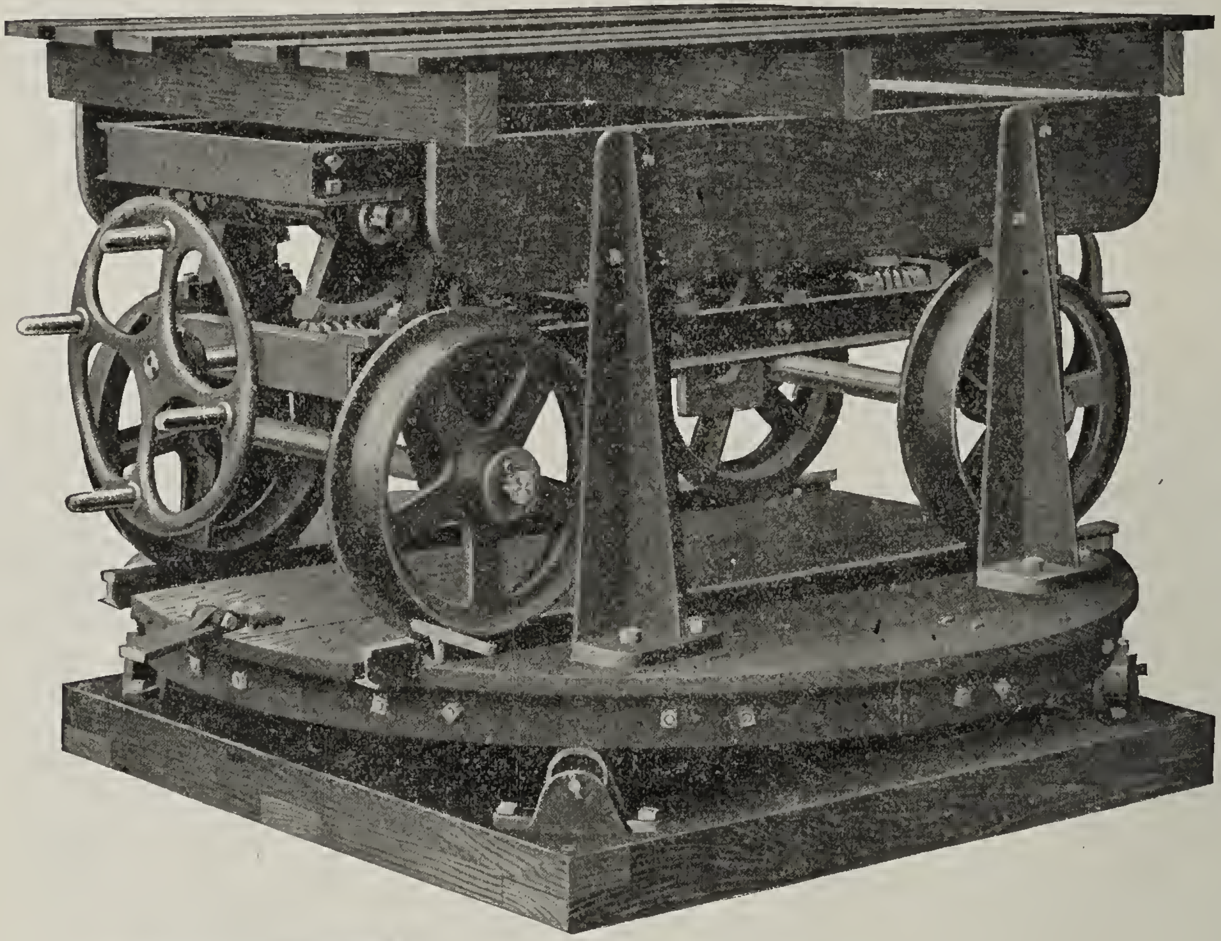

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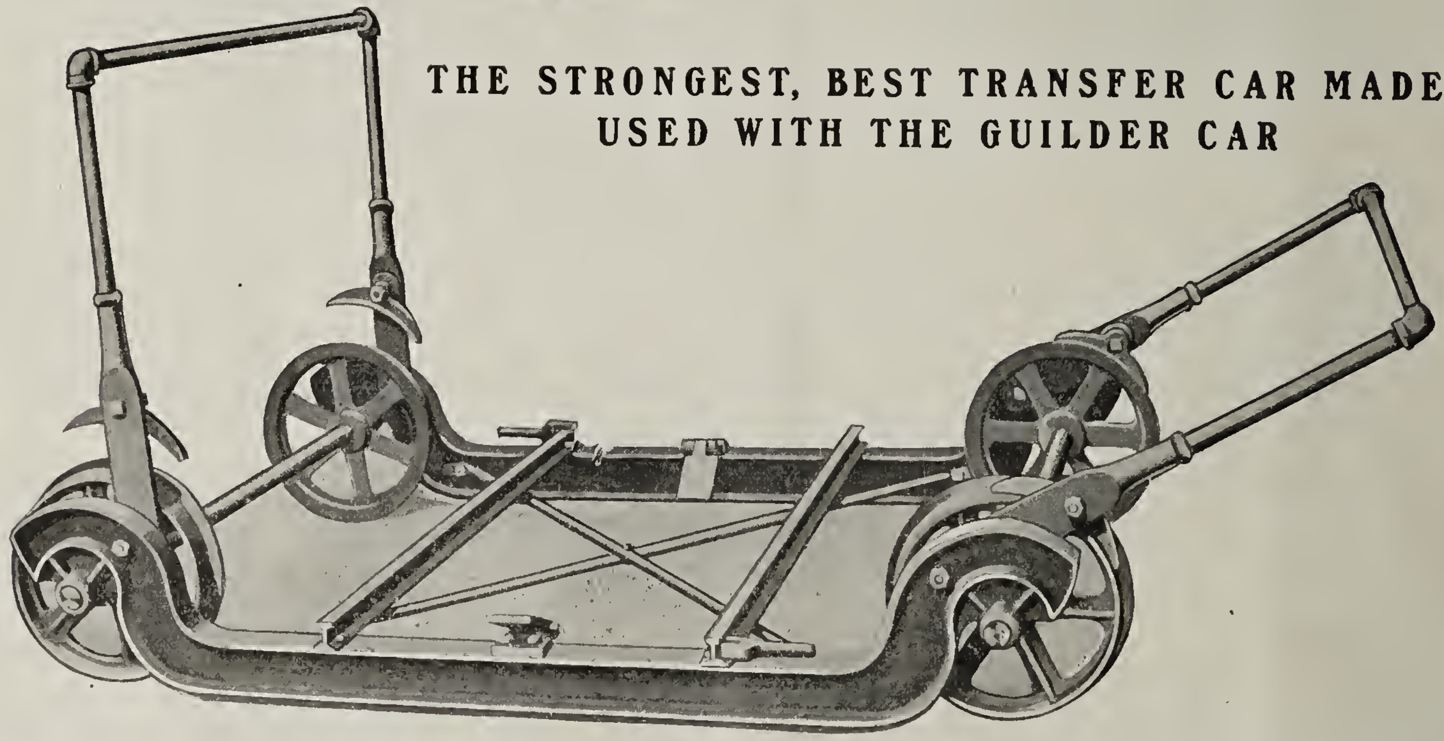

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Single Copies, - 10 Cents

THE 28TH ANNUAL MEETING OF IOWA CLAY MANUFACTURERS

The twenty-eighth annual meeting of the Iowa Brick & Tile Association was held at Mason City, January 13th and 14th. There were 157 members in attendance, the largest in the history of the organization, exceeding the meeting at Des Moines last year by about twenty members. Many clay manufacturers were interested in the eight large plants which ship out more drain tile than any city on the face of the earth and make the state of Iowa at the head of the list for drain tile manufacture.

The large attendance was not the only evidence of increased interest as a thorough reorganization was started that will add largely to the value of the association.

The first session was called to order by President Charles L. Smith, of Mason City, he introducing Mayor McConlogue, who made a splendid speech. Among the things that he said was that he would not turn over the keys to the boys. He said he would keep them in his possession and that they all had better behave or they may know him better in the morning. This was quite a new stunt as the "keys" to the city is generally turned over to clay manufacturers when they hold a convention in any city. His excuse for this was that he was not personally acquainted with all the members and he thought it was not advisable.

In response to this address of welcome, O. C. Pixley, of Des Moines, made a splendid reply, although he was primed to receive the keys and to return them to the mayor at the end of the meeting he did not get the chance, however he rallied and did the honors in a very charming manner.

The president then read the following address:

ANNUAL ADDRESS OF PRESIDENT SMITH

Gentlemen of the Association and Fellow Craftsmen: To me it is a pleasure to see so many of you present, and I feel from the becoming smiles and the earnest expressions on your faces, you have come for a good time and will aid us in making this one of the most profitable meetings to the craft of any in the history of the association.

Another season of bountiful harvest has been gathered in, with the prevailing high prices for the farmers' products, it betokens in a measure a period of good times, for the farmers of this country, this with the settled financial conditions is moving our railroads and other large corporations in a period of activity, little thought of six months ago.

It is indeed pleasing to see the resumption of building operations, and the placing of heavy orders for structural material. One year ago when we met, conditions were quite different, the financial horizon was almost obscure and all securities depressed on account of money going as it does at such times out of circulation, to the vaults and Shylocks of our money centers, to wait a more inviting time to return at a little higher rate of interest than before.

Notwithstanding Iowa farmers in the past decades have been unusually prosperous, land values having doubled and tripled in many instances, and the price of their products never higher, with the abundant harvests, made the farmers the most prosperous of any other class.

With these as our clients, we as manufacturers should be prosperous too, but are we as a class? How many of you can look out upon your well built shops and realize the same ratio of gain as has come to the farmer in the past ten years?

I fancy there are but few. Now, why does this condition exist? When you make bricks that are as enduring as time, to rebuild the beautiful homes and cities of this grand country, and you that make tile to reclaim the wet land, out of which your clients realize 25 to 100 per cent annually, on the investment, and the improvement so different from any other in farm operations: You build a house, barn, or granary, the moment it is under construction, and as long as it lasts, it's a risk to fire, lightning and tornadoes, and unless built of good bricks is subject to quick corrosion, while a good drainage system will endure all time to come, unless molested by earthquake like that of Italy, even then as the sea would recede it would aid in removing stagnation, and save its cost in quick lime to preserve sanitation,

165117

and then continue to slave and perpetuate dividends, we often hear of, but they never mature, for the clay-worker. They are usually a year or so in advance.

Now, there is not a business in this land producing a commodity, in my judgment, that is so satisfactory to the consumer, but we as manufacturers fail in a measure to realize our share of a just profit, often we are ourselves to blame, working antiquated methods, and need to produce more positively. This requires the very best equipment, manned by the best men you can have at your command. You all know where the best machinery is made to work your respective clays, without having to pass through the expensive, experimental stage, that so often produces failure with the novice, and baffles the patience of the men grown gray in the work.

One other suggestion I would make along these lines is a closer organization from an educational and financial standpoint, to bring about the most economical results.

We as clay-workers are progressive, contrast if you please the modern plants of this city with one of Iowa's pioneer plants established in 1882, 27 years ago, the machinery equipment consists of one Penfield plunger machine with three horses as the motive power, producing about 3,000 feet of 4-inch tile per day out of the prairie loam clays, and burning them in one 18 ft. round draft kiln. You will see in passing through the well equipped plants of this city, single machines producing in a single column 34 to 40,000 four inch tile in a day of ten hours, or its equivalent in other sizes. This marvelous result has been brought about by close application of operators, and our close communication with one another, and a constant pressing demand on the clay machinery men for machinery of higher efficiency.

You may think when you have passed through the plants, it's the slippery nature of the clay that merits all this, we know we have good clay in abundance, but let me tell you it requires more careful work to prepare our clays from the bank to the machine than any clay I have ever worked, and, I feel you will agree with me if you will take the time to study the situation carefully. To bring about the desired result of a greater finance for our co-operation it would seem we have talent at our command to place this association on a higher plane, and no doubt our most worthy secretary will in due time present to you the results of his deliberations, on this subject.

The association you will see by McHose, has had its ups and downs, from time of its organization to the present time, its first inspiration, was tile drainage and the manufacture of clay products with machinery. It run along smoothly through the eighties, or when the dry season set in, about that time the paving brick became the burning question of the hour, this for a time gave it new life but we continued to meet year after year until interest began to lag to such a degree that we failed to interest our fellow craftsmen sufficiently to attend our meetings whom were residents of the cities in which we were holding our meetings, a change was made in the plan of the organization and we have been successful in maintaining an interest up to this time, yet I believe there is a chance to reach out broader and higher.

J. B. McHose of Boone, read a paper on the "History of the Organization," which was followed by remarks from F. A. Stephenson of Mason City, who was one of the charter members of the association, the only one present at the meeting.

President Smith then appointed the following committee on the Revision of the constitution: Judge J. L. Stevens of Boone; Chas. Rawson, of Des Moines; O. T. Denison, of Mason City; J. A. Wilson, of Dows, and C. A. Marshall, of Cresco. On resolutions he appointed: W. H. Brecht, of Des Moines; J. D. Morey, of Ottumwa, and J. B. McHose, of Boone.

At the afternoon session the committee on new consti-
retary. This and the partial report preceding it led to ex-
by C. A. Wrightman, of Des Moines, was read by the sec-
tution made a partial report and a paper on "Association"
tensive discussion on new methods calling for reorganiza-
tion, etc.

The third session, that of the morning of January 14th, was presided over by Vice-president Judge J. L. Stevens, of Boone; during the night President Charles L. Smith was quarantined on account of his daughter being taken with diphtheria. Paul Beer, of Des Moines, then read a paper on "Pavements—their object and desirability." This paper will be found in full in this issue of the Clay Record.

The next subject taken up was "Economy of Electric Drives as applied to brick and tile Production," by E. A. Lof, of Chicago. This paper can be found in another part of this issue.

This paper was followed by an illustrated description of a drying process and the Scott conveyor system, by E. H. Vitalius of Detroit, Mich., who represents the American Blower Company.

"The Life of Portland Cement No. 3," by G. G. and A. J. Wheat, of Emmetsburg, was the next on the program and will be produced in full in a later edition of the Clay Record. These gentlemen certainly know how to handle the subject and show it up to the best advantage with the lantern slides and shadographs. They handle the subject from both a chemical and scientific standpoint and certainly show that cement drain tile and sewer pipe are not durable.

The vice-president then appointed the following committee to place in nomination new officers to be voted upon for the coming year: O. C. Pixley, Des Moines, J. D. Morey, of Ottumwa, and C. F. Green, of Sioux City.

This committee reported later the following: For president, Judge J. L. Stevens, of Boone; vice president, Paul Beer, of Des Moines; secretary, C. B. Platt, Van Meter, and for treasurer, F. A. Stephenson, of Mason City.

The association received a strong invitation to meet in Des Moines next year.

The banquet given by the Mason City Clay Manufacturers was one of the best in the history of the association. It took place in the Elks Hall and was prepared or served by the ladies of the city. Judge J. L. Stevens was the toast master and made an exceptionally good one. His great wit was appreciated by everyone. Among the speakers were the Hon. Mayor McConlogue, J. B. McHose, of Boone, Charles W. Lansing of Chicago, G. G. Wheat of Emmetsburg, O. M. Carter of Mexico, Mo., James E. Randall of Indianapolis, Geo. H. Hartwell, of Chicago, Charles Burridge, of Tecumseh, Mich., J. A. Wilson, of Dows, and O. T. Denison, of Mason City.

The eight clay plants kept open house and were being visited constantly by all the clay manufacturers, as was the plant of the Vulcan Iron Works, which manufactures cars and supplies for all of the works.

PAVEMENTS THEIR OBJECT AND DESIRABILITY *

By Paul Beer, Des Moines, Ia.

The primary object of a road or street is to provide a way for travel and the transportation of materials and produce from one place to another. The facility with which this traffic may be conducted between two objective points over any given road, depends upon the resistance offered to the passing of vehicles by the road surface or the grades, and also by the freedom of movement allowed—which is dependent on its width and form.

In order that a road may offer the least resistance to traffic, it should have as hard and smooth a surface as possible, at the same time affording a good foothold for horses, and should be so located or laid out as to give the least possible gradients.

The expediency of any proposed road construction or improvement depends upon its desirability as affecting the comfort, convenience and health of residents of the locality in which it is proposed to build it, and also upon its economic value, which is largely determined by its cost and durability as well as upon the facility it gives for the conduct of traffic. The problems of the highway engineer in designing works of this character involve the consideration of all these elements, and their proper adjustment, to give the best results.

The "Road Surfaces" most commonly employed are:

(a) Streets of Cities and Towns.—Sheet Asphalt, Asphalt Block, Vitrified Brick, Creosoted Wood Block, Stone Block.

(b) Suburban Streets, Parks and Private Drives, where the nature of the subsoil will permit it, and important country roads.—Macadam, Tar Macadam, Petrolithic, Gravel, Vitrified Brick.

(c) Ordinary Country Roads.—Earth or Gravel.

The desirability of a road surface depends both upon its fitness for the service required of it and upon its durability in use. The problem of country road improvement consists ordinarily in providing the hardest and most durable surface consistent with an economical expenditure of available funds; the object being to lighten the cost of transportation by reducing the resistance to traction, and to render travel easy and comfortable. Other factors, however, are of much importance in the design of improvements to city streets.

The comfort, both of those using the street and of the occupants of adjoining property, will be largely affected by the freedom of the surface from noise and dust. The safety of the pavement in use, its effect upon the health of residents of the locality, and its economic value must in each case be considered.

Adjusting to the best advantage these various elements, is a matter which can be accomplished only by the exercise of good judgment. Local conditions and necessities must always be considered—such as the difficulties of drainage, the availability of various materials, the nature of the traffic to be carried, and the needs of the business or property interests of the neighborhood. Thus, for the heavy hauling of a large city, durability and resistance to wear may be the paramount consideration; for the business district, quiet may be very important; in residential districts, the elements of comfort and healthfulness may properly be considered as of greater force than the purely economical ones; while in all cases the necessary limitations of first cost will largely determine what may or may not be done.

ECONOMIC VALUE

The chief factors to be considered in the proper determination of the economic value of any proposed street improvement, are:

1st. Cost of construction.
2nd. Cost of maintenance and repairs.
3rd. Cost of conducting transportation.
4th. Effect upon land values or business interests.

The cash cost of a pavement is quite tangible and easily estimated. The advantages of a pavement cannot be directly estimated and these advantages are often overlooked. It should not be assumed, however, that they have no financial value, nor should it be assumed that that pavement which may be constructed and maintained for the least money is necessarily the most economical to use.

THE COST OF MAINTENANCE AND REPAIRS

This includes an estimate of the average cost of keeping the pavement in good condition over a term of years, taking into account the necessity of renewing the surface at the expiration of the life of the pavement, the cost of cleaning and sprinkling, and such minor repairs as may be necessary from time to time to maintain a uniformly good surface.

The cost of maintenance of each kind of pavement varies widely in different localities according to the character of the construction and workmanship, and no general rules can be laid down as to the relative costs. All road surfaces will require maintenance, the same as any other class of engineering construction subject to wear in use; as a rule the cost of maintenance will be less according to the care used in keeping the surface always clean and in good condition is greater.

THE COST OF TRANSPORTATION

This is affected by the nature and condition of the road over which traffic must pass, both because the resistance to traction offered by the surface determines the load that may be hauled over it, and because the relative roughness or smoothness of the surface determines the limit of speed or traction, and the amount of wear upon horses, harness and vehicles.

That portion of the traffic which is confined to the hauling of maximum loads will be directly affected by differences in tractive resistances; the number of loads necessary to move the traffic being approximately proportioned to the resistance. For light traffic, the greater speed incident to a smooth surface and easy grades will be of value as a time saver, although the saving may be difficult to state in dollars and cents. The effect of a smooth surface is very appreciable in the cost of wear and tear upon horses, vehicles and harness. The value of this item has been variously estimated at from one to ten cents per mile traveled.

Earth roads in good condition, and creosoted wood block pavements when dry, seem the most favorable to horses, while asphalt and brick pavements are considered most advantageous as to general wear. On earth roads in poor condition the wear is very severe, and on stone block pavements it is estimated that the wear is three or four times as great as on asphalt or brick. The value of the saving of this wear and tear is difficult to ascertain, but it is no doubt sufficient to make it an important item in the cost of highway transportation.

LAND VALUES

The effect of street improvements upon the value of adjacent property is dependent upon the nature of the uses to which the property may be put. The value of comfort, convenience, safety and healthfulness to a community, as affected by the condition of its streets, cannot readily be stated in figures; but all these items have a money value, both in their effect upon the general life and business of the community, and in the attraction presented by them to outside business enterprises or homeseekers.

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*Read before the convention of the Iowa Brick and Tile Association at Mason City, Iowa, Jan. 14, 1909.

HYGENIC CONSIDERATIONS

The effect of a pavement upon the health of residents in its locality is dependent upon the tendency of the materials composing it to decay, its permeability and its freedom from noise and dust. The permeability of a street surface is important because of the tendency of surface water, and refuse matter to penetrate and saturate it, and thus cause it to become dangerous to health. A continuous sheet pavement is the most desirable in this respect, and a block pavement with open joints the least so. If the material of which the pavement is composed be permeable it may gradually become saturated with street refuse, even though the joints be made tight, and when it begins to decay may of itself become most obnoxious to health.

The chief objection raised to the use of wood block pavement is its permeability, for while the joints may be made practically tight and impervious, the wood itself will, in the course of three or four years, begin to lose its preservative oils and it then becomes a receptacle for all the dirt and filth which falls upon it. The objection to a stone block pavement is that its joints cannot be made tight, and it is furthermore very difficult to keep clean, either by sweeping or flushing. Macadam pavement is also permeable and therefore objectionable for use in city streets.

The noise made by traffic upon a pavement is important, not only because of its effect upon the comfort of the people using it, or living adjacent to it, but also because to it are frequently attributed many nervous disorders to which people in some cities are subject.

Stone block pavements are the most objectionable in this respect, causing a continual roar, due both to the rumbling of wheels over them and the blows of the horses feet upon them. Upon asphalt, the only noise is that due to the horses feet, giving a sharp clicking sound. Upon wood the horses produce no appreciable sound, but the wheels of the vehicle give a dull rumble, generally considered the least objectionable of any of the noises made by the more common pavements. A brick surface gives a combination of the sounds of wood and asphalt, the clicking being much less sharp than on asphalt, and the rumble less noticeable than on wood. On any block pavement the noise is lessened in proportion as the foundation is made firm and the joints close and well cemented.

The giving off of dust by a pavement under the action of traffic is also objectionable on the score of health as well as comfort. All pavements produce more or less dust, the amount depending more upon the method of construction and the care used in forming the surface and filling the joints, than upon the material of the pavements. For the most part, however, the presence or lack of dust is dependent rather upon the maintenance, cleaning, sprinkling and flushing of a pavement than upon its nature. The dirt on the surface of a hard pavement is usually carried there from the outside and is not due to the pavement itself.

Earth and broken stone roads wear rapidly and make dust freely in dry weather, requiring frequent sprinkling and cleaning to keep the road clear. On this account they are objectionable for use in towns under any considerable traffic.

SAFETY

Another very important consideration in the construction of a pavement is its safety. The safety of a street surface depends upon the foothold afforded by it under normal conditions to horses, and also upon the degree of slipperiness that it may take, both in wet weather and under the influence of ice and snow in winter.

The relative safety of the various pavements used in city streets is a matter upon which there is considerable difference of opinion among authorities. Local conditions affect the pavement in this regard to an important degree. Relative dampness or dryness of climate, shade from buildings, cleanliness of the streets, and the prevalence of snow and ice in winter are all important factors for safety. It is conceded that a dry earth road in good condition gives the best and surest foothold, with broken stone and gravel roads nearly as good, but the relative dryess or wetness of an earth road is entirely dependent upon the whims and fancies of nature, and the earth road is therefore a very uncertain quantity with which to deal.

Observations made by Capt. Greene in several American cities on granite block, creosoted wood block, and asphalt pavements show that asphalt under all conditions is the safest, while creosoted wood block is the most dangerous. Wood block paving is very safe when dry, but exceedingly treacherous when wet, and positively dangerous in cold weather. Granite block paving is unsafe under all conditions. Asphalt paving is safe when dry and less dangerous than either of the other two pavements when wet. All hard pavements are slippery when muddy and cleanliness is therefore a necessary condition to safety.

Under a light fall of snow both wood and asphalt become slippery, and in freezing weather wood becomes slippery through the freezing of the moisture retained by it.

No statistics were submitted by Capt. Greene as to the safety of brick pavements, but it is conceded by the best authorities to be the most satisfactory of all paving materials so far as safety is concerned, both in dry and wet weather.

It may be remarked in connection herewith that the likelihood of a horse falling upon any pavement depends very largely upon the training of the animal and whether or not he be accustomed to the particular surface in question.

DURABILITY OF VARIOUS SURFACES

The qualities which especially affect the durability of a pavement may be partially enumerated as follows:

(1) The hardness and toughness of the material composing the surface, upon which depends the resistance of the surface to the abrading action of horses' feet and vehicles passing over it.

(2) The firmness of the foundation, which serves to distribute the loads over the road bed, and keep the surface uniform.

(3) The drainage of the road bed, which can only properly sustain the loads which come upon it when it is dry.

(4) The permeability of the surface, which should form a water-tight covering to serve in keeping the foundation and road bed dry.

(5) The resistance of the materials of the pavement to the disintegrating influences of the atmosphere, and to the action of the weather.

The relative importance of these various factors, in any particular case, depends largely upon the nature and extent of the traffic which is to pass over the pavement.

Granite block, when laid upon a firm, unyielding foundation, gives the hardest and most durable surface of any of the common pavements. This is especially true where the surface is subjected to the impact of very heavy loads.

Asphalt and brick rank next to stone, and when well constructed are satisfactory under any but the very heaviest traffic.

The relative durability under heavy traffic of brick and asphalt is a matter of doubt, both materials being subject to considerable variations in quality and showing varying results in different localities, due both to differences in quality of material and to differences in the methods of construction.

Wood is less durable and is suitable only for comparatively light traffic, unless its other advantages are considered worth the high cost of maintenance under heavy traffic, as has been the case in London, where wood has been largely used under traffic which has required its renewal every four or five years.

Broken stone macadam, under which head is also included petrolithic and bitulithic pavements, wears rapidly under moderately heavy traffic, and should be used only on suburban side streets, country roads, parks, and private drives—roads used principally for light driving. Even so, the maintenance cost of macadam is always very high, even under the most favorable conditions.

In considering the durability of a pavement it might be well to add here that while cleanliness is especially important so far as wood, asphalt or broken stone is concerned, vitrified brick or stone surfaces are not at all injured by neglect. It might also be well to add that the wear of a pavement also depends largely upon the smoothness of its surface; the impact to which the material is subjected is produced by irregularities, from which it follows that the most durable material does not necessarily give the greatest resistance to wear. This is especially true of the stone block street under medium heavy traffic, it being ascertained by observations that under like conditions of traffic, a vitrified brick street will have the greater life.

The major portion of the foregoing is from "Roads and Pavements," by Mr. Fred P. Spaulding, M. A. S. C. E., Assistant Professor of Civil Engineering in Cornell University.

SUMMATION

We have now considered the desirability of pavements, their object, and the different kinds from which it is possible to make a choice. The question now arises: What character of street surface is most suitable for cities and towns having a population of less than one hundred thousand?

Stone blocks are to be avoided as a paving material, except for the heaviest traffic of our very large cities. There is little or no stone block paving in Iowa west of the Mississippi River towns, except at Council Bluffs, and because of the incessant noise and the wear and tear on horses and vehicles, and the unsightly appearance of the one stone block street in that city it is soon to be resurfaced with asphalt.

A macadam street is quite out of the question in this Iowa country owing to the softy, spongy condition of the soil. Moreover, the soil has a clay base and consequently is very unstable in wet weather. Even were the soil of such a nature as to permit the construction of macadam streets, there is no hard durable material within the borders of the state with which to build a first-class macadam pavement. In the eastern states, where the ground is sandy, with a rock or slate foundation, and where good hard material may be easily and cheaply obtained for its proper construction, a macadam road serves most excellently; but even in the eastern states, under the best of conditions, the maintenance cost of macadam roads is very high as it is found that the automobile, which has come with us to stay, cuts into the road very badly.

Our choice therefore resolves itself between one of the three following permanent pavements:

(1) Creosoted wood block.
(2) Asphalt.
(3) Vitrified brick.

During the past three or four years, creosoted wood block paving has been very strongly promoted in various parts of the United States. Many of the creosoted block streets which have been built have given eminent satisfaction, while many others have proved themselves absolutely worthless. The most satisfactory wood block streets are those constructed of "Long Leaf Yellow Pine" with a twenty-pound creosote treatment per cubic foot, the street itself being built in accordance wiith the best known methods of construction. Such a street will cost in the neighborhood of $5.00 per square yard and upward. Creosote block streets which have proved unsatisfactory, are those where Hemlock, Tamarack, and Norway Pine are used as a material. These woods are very soft and light in comparison with "Long Leaf Yellow Pine" and are far more resistant to the creosote treatment.

There are, therefore, the following objections to creosoted blocks as a paving material:

(1) Its high first cost.
(2) Its uncertain life.
(3) Its menace to health due to early decay.
(4) Its danger to man and beast when wet or freezing.

Asphalt is a very satisfactory pavement, many authorities considering it the most satisfactory of all pavements for those cities large enough to maintain a municipal asphalt plant; it would probably not be satisfactory for small towns. While it is true that it is a comparatively easy matter to repair an asphalt street, it is also true that if you do not have the means for making repairs you would probably find it an unsatisfactory pavement.

BRICK PAVEMENTS

A vitrified brick pavement is the cheapest of all pavements and the most satisfactory, everything considered. It is durable, easy of traction, sanitary, clean and safe. Its first cost will depend on the foundation used, the character of the filler and workmanship. A vitrified brick pavement for a light traffic street, constructed in accordance with the No. 1 specification as adopted and recommended by the National Paving Brick Manufacturers' Association, should last from fifty to seventy-five years without the necessity of repair or replacement, provided the street be not torn up for service pipes, sewers, etc. A fair comparison of the first cost per yard of the three most satisfactory pavements follows:

Creosoted Wood Block..	$3.00 to $5.50 per square yard.
Asphalt	$2.15 to $2.40 per square yard.
Vitrified Brick	$1.86 to $2.00 per square yard.

FIRST TILE USED IN AMERICA

According to a New York bulletin, the first tile drains used in America were laid near Geneva in 1837 by John Johnston. Mr. Johnston's farm of three hundred acres consisted of clay foam and clay soils, with smaller areas of marshy land, but it could not be regarded as being more wet than the average of the land in that region. During the course of thirty years Mr. Johnston installed between sixty and seventy miles of tile drains in his farm, with results entirely satisfactory to himself. So marked were the effects of his drainage system on the condition of his soil and the yield of crops that it attracted wide notice and, through the New York State Agricultural Society, led to the public recognition of Mr. Johnston's services to the farming community. He was presented with several gold and silver pieces as emblems of this esteem. Many other men were led to the use of tile drains through Mr. Johnston's example and the gospel of tile drainage seems to have spread out from Geneva as a center. The drains installed by Mr. Johnston are still in good working condition. The yield of crops, which are reported to have increased from the indifferent amounts of fifteen or twenty bushels of wheat an acre to thirty or forty bushels an acre and frequently more, are still maintained under the management of the present owner, Charles R. Mellen. The first tiles installed were U-shaped and sole tiles, some of which were imported from Scotland, the native place of Mr. Johnston. Later he used round tiles. They were hard burned, and were laid at an average depth of two and one-half feet.

THE ECONOMY OF ELECTRIC DRIVE AS APPLIED TO BRICK AND TILE PRODUCTION *

By Eric A. Lof, Electric Engineer, Chicago, Ill.

The question of the advisability of electric drive in brick and tile factorics may at the present be regarded as decided in the affirmative. There are a great many points that effect the character of power distribution, and in addition to the saving in cost of supplying power to the productive machinery, all these other factors should be given due consideration. The satisfactory and economical handling of raw and finished material, reliability of service and the preventing of injury to individuals must also be looked out for. Future expansions of the plant should be made possible without undue rearranging the original equipment.

The electrical distribution of power so fully meets the requirements of brick factories that it has become recognized as pre-eminent for use in large as well as in smaller plants.

In making a choice between the various means for power distribution, a manufacturer should naturally bear in mind the effect that the various arrangements may have on the several elements that enter into the manufacturing cost. Manufacturing requirements demand the earning of dividends and this in turn necessitates that the product shall be turned out at the least total cost.

A mechanical system of driving is, besides inefficient, also inelastic. As machines are added time and again, the shafting, bearings and hangers become so strained and twisted that it is a wonder that they do not break down altogether. An electric system, on the other hand, is perfectly elastic. Motors can be added from time to time without in any way affecting the efficiency of the system. Machines can be put in positions, which would be impossible if they were driven by means of belting, and besides this, a perfect control of the individual machines is made possible with the electric system.

The fact, however, must never be overlooked that the generation of electricity by steam power must necessarily be dearer at the generator than the steam power itself. It is in the method of transmission and application that electricity scores and by installing the motors right near the productive machines, avoiding all unnecessary losses, can we secure the highest economy and beat commercially every other method of driving.

The first cost of the power generating and distributing system is often of less importance as compared with other factors, which is, however, not the case in regard to the efficiency of the system. The losses in the distributing system naturally affect the size of the generating plant and the value of this lost power is an item of great importance. With mechanical drive, these losses are constant as long as the shafting is running whether the productive machinery is running or not. This is, however, not the case with electric drive as at no load when the motors are not running there is no loss taking place in the system.

An accurate knowledge of the absolute loss of power in driving shafts and belts would be of great value in determining the exact gain that would be affected if electric drive was substituted for mechanical drive. There have, however, been many tests made to determine these losses and it has been shown with the plant running *at full load* it will range from 30 to 60 per cent; an average for clay working plants being 40 per cent. Should only a few machines be running the losses may, of course, come up to 75 or 80 per cent of the generated power, or in other words, four-fifths of the coal consumption is wasted in friction losses. With electric drive the losses are easily determined and will not exceed 25 per cent, of which 12 per cent is consumed in the motors, 5 per cent in the wiring, and 8 per cent in the generators. With the electric system it is possible to insert indicating instruments in the various circuits and a complete check can at all times be had on the power consumed by the various machines. This is particularly valuable in testing departments in order to determine the power required for driving brick machinery for different sorts of clay.

The advantage of electric drive is especially apparent where the conditions demand the location of the power house at a distance from the manufacturing buildings. Also when cheap electric power can be purchased from an electric power company, the value of electric drive is still further accentuated. In such cases the power is supplied over long distance transmission lines at a high voltage, which is stepped down at the manufacturing center to a pressure adopted for the motors.

The alternating current three-phase system is probably the best adapted for brick factories. This system consists of a three-phase generator composed of a stationary and a revolving part, an exciter for delivering the magnetizing current for the generator fields, a system of distributing wires and the motors.

The alternating current system is simpler than the direct current system in that no current has to be delivered to any moving parts of the motor. In the direct current system current must be delivered to the rotating armatures of the motors through carbon brushes and a commutator. This commutator is the main difference between alternating and direct current motors. The brushes and the commutators are the only parts of the direct current motors in which trouble is liable to arise due to accumulation of dust and dirt. The simplicity, durability and freedom from breakdown are, therefore, the main advantages of the alternating current motor. The pressure best suitable is 220 volts, as the danger by coming in contact with the wires is not very great and as this pressure can directly be used for the lighting system, which in all cases naturally is provided. Where very large motors are used, it may be advisable to use a pressure of 440 to 550 volts, as with this voltage the size of the wiring can be considerably reduced. Step-down transformers for the lighting system will, of course, have to be provided in such a case.

The frequency of the system is usually 60-cycles, as the same gives good lighting results, at the same time not causing any excessive inductive effects. The three-phase system has the advantage over the two-phase in that the wiring is simpler and in that the amount of copper required for the distributing system is less.

For driving brick machinery, where a high starting torque is required, the induction motors with phase-wound secondaries will exactly meet the conditions. The secondary winding itself has a very low resistance, which means high effciency and good regulation. By the insertion of external resistance in the secondary winding, the motor will be able to develop maximum torque at the start with moderate starting current. The motor should be large enough to carry the load under normal conditions without overloading it, and for brick making machinery the motors should be able to develop a starting torque of at least two times the normal running torque. Each motor should be provided with its own starter complete with overload and no voltage features. The former device will disconnect the motor on heavy overloads and the latter will disconnect the motor if the plant for some reason is shut down.

The operation of every machine and conveyor by its own motor produces a very satisfactory appearance, but it may not return the most economical result. Very small motors are not so efficient as larger ones, and besides they are more expensive per unit of power. For this reason it will frequently be found advisable to drive a group of smaller machines with one motor of a larger capacity, providing that the shafting for these machines does not become too extensive.

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*Read at the Mason City meeting of the Iowa Brick and Tile Association, January 14, 1909.

An example showing the actual saving of an electrically driven plant as compared to a mechanically driven may prove of interest. Through the courtesy of a Clay Machinery Company, which has installed several very successful electric driven plants, I have been fortunate to obtain data that will give a very accurate idea of the saving that can be accomplished.

Assume a brick plant with a yearly production of 25,000,000 brick, which has to be equipped with the following productive machines:

1 Brick machine, consuming	75 H. P.
1 Pug mill	50 H. P.
3 Dry pans, each	35 H. P.
Represses and cutters	35 H. P.
Elevators	20 H. P.
Conveyors	8 H. P.
1 Exhaust fan	50 .H P.
1 Disc fan	10 H. P.

This will total approximately 350 H. P.; the fans running 24 hours, but all of the other machinery only 10 hours per day.

STEAM DRIVEN PLANT WITH SHAFTING

The average load during the period when the plant is running will be approximately 85 per cent.

COST OF INSTALLATION

1 600 H. P. boiler equipment, complete with stacks, pumps, piping, etc.	$ 9,000 00
1 400 H. P. engine	4,500 00
1 60 H. P. engine	2,200 00
1 15 H. P. engine	600 00
Belting, shafting, complete	2,500 00
Total cost of installation	$18,800 00
Horse Power hours produced per year—	
400 H. P., 85 per cent, 10 hrs., 300 days, equals 400x.85x10x300, equals	1,020,000
75 H. P., 85 per cent, 24 hrs., 300 days, equals 75x.85x24x300, equals	460,800
Total H. P. hours	1,480,800

COST OF PRODUCTION

Fuel, eight pounds per H. P. hour, equals 5,900 tons at $2.00	$11,800 00
Interest, depreciation, taxes, insurance, etc., on boilers and engines, 15 per cent on 16300	2,445 00
Interest, depreciation, taxes, insurance, etc., on shafting and belting, 30 per cent on 2500	750 00
Oil, waste, etc.	750 00
1 Day engineer at $75.00	900 00
1 Day fireman at $60.00	720 00
1 Night engineer at $60.00	720 00
Total cost of operation	$18,085 00

STEAM DRIVEN PLANT WITH ELECTRIC MOTORS

The average load in this case is only 80 per cent.

COST OF INSTALLATION

1 500 H. P. boiler equipment, complete with stack, pumps, piping, etc.	$ 7,000 00
1 350 H. P. engine	4,000 00
1 75 H. P. engine	2,200 00
1 250-K. W., 3-phase generator	2,800 00
1 50-K. W., 3-phase generator	1,050 00
Cabling	750 00
1 75 H. P. motor for brick machine	675 00
1 50 H. P. motor for pug mill	475 00
3 35 H. P. motors for dry pans	1,050 00
1 35 H. P. motor for cutters and represses	350 00
1 20 H. P. motor for elevators	300 00
1 8 H. P. motor for conveyors	115 00
1 10 H. P. motor for disc fan	145 00
1 50 H. P. motor for exhaust fan with variable speed regulator	550 00
	$21,460 00
Less extra cost for buildings	2,500 00
Total cost of installation	$18,960 00
Horse power hours produced:	
350 H. P., 80 per cent, 10 hrs., 300 days, equals 350x.80x10x300, equals	840,000
75 H. P., 80 per cent, 24 hrs., 300 days, equals 75x.80x24x300, equals	432,000
Total H. P. hours	1,272,000

COST OF PRODUCTION

Fuel, seven pounds coal per H. P. hours, equals 4,450 tons at $2.00	$ 8,900 00
Interest, depreciation, taxes, insurance, etc., 15 per cent on $18,960.00	2,845 00
Oil, waste, etc.	500 00
1 Day engineer at $75.00	900 00
1 Day fireman at $60.00	720 00
1 Night engineer at $60.00	720 00
Total cost of operation	$14,585 00
Cost with mechanical drive	$18,085 00
Cost with electric drive	14,585 00
Saving by electricity	$ 3,500 00

Equals 19½ per cent.

For gas driven plants the respective costs will be somewhat less than with steam driven.

Assume the same plant as before, but with gas engine, we get:

MECHANICALLY DRIVEN PLANT

Cost of Installation.

Producer equipment	$11,000 00
Gas engines	22,000 00
Belting and shafting	2,500 00
Total	$35,500 00

COST OF PRODUCTION

Fuel, 1½ pounds of coal per H. P. hour, equals 1010 tons at $2.50	$ 2.525 00
Interest, depreciation, taxes, etc.	5,700 00
Oil, waste, etc.	500 00
1 Day engineer at $75.00	900 00
1 Helper at $40.00	480 00
1 Night engineer at $75.00	900 00
Total	$11,005 00

ELECTRICALLY DRIVEN PLANT

Cost of Installation.

Producer equipment	$ 9,000 00
Gas engines	18,000 00
Generators	3,850 00

Cabling	750 00
Motors	3,660 00
	$35,260 00
Less extra cost for building	2,500 00
Total	$32,760 00

COST OF PRODUCTION

Fuel, 1½ pounds per H. P. hour, equals 950 tons at $2.50	$ 2,275 00
Interest, depreciation, taxes, etc.	4,920 00
Oil, waste, etc.	300 00
1 Day engineer at $75.00	900 00
1 Helper at $40.00	480 00
1 Night engineer at $75.00	900 00
Total	$ 9,775 00
Cost with mechanical drive	$11,005 00
Cost with electric drive	9,775 00
Saving by electricity	$ 1,230 00

Equals 11 per cent.

Another place where a considerable saving can be made is by adopting electricity for the hauling of the clay from the clay banks to the factory. In one case in a brick plant outside of Chicago where this system has been installed, the operating force alone for this part of the plant was reduced by about ten men.

That there is a very large field open for the introduction of electric drive in existing brick plants and the tremendous saving that thus could be accomplished is shown by the government's statistics.

Number of plants	4,634
Number of plants reporting	3,476
Number of steam engines	4,113
Total H. P.	246,200
Number of gas engines	222
Total H. P.	5,245
Number of electric motors	128
Total H. P.	3,036

Before concluding this paper it would be well to consider what one of our prominent brick machinery manufacturers has to say in regard to the electric drive:

"Try to picture in your mind a brick plant free from line shafting and the necessary millwright work to support it, or the necessary brick or concrete piers. No line shaft bearings to require proper oiling. No pulleys. No couplings to work loose. No belting to fan the air, break or get loose and slip. No constant renewals and sewing of same. No danger of employees being maimed by being caught in belts, and such accidents to be followed up by annoying and expensive law suits, and payment of lawyers' fees, court cost and damages. And when the 'electric juice' is taken from a centralized plant or trolley line there will be no boilers, no engines, no engineer, no fireman, no water, no coal, no smoke, soot, ashes, or dust. With the machinery properly built, setting on good foundations, driven by direct connected motors, a greater portion of the noise is removed. Then imagine a dryer drying your brick with waste heat drawn from kilns being burned with producer or natural gas, thus eliminating smoked up brick in the dryer, no coal laying around the kilns, no men to handle the coal and ashes from the kiln, no smoke rolling from the kilns. This is not a dream, but the future brick maker's millenium, which a great many are enjoying today."

BURNED CLAY VS. CONCRETE CONSTRUCTION

THE DANGERS OF CONCRETE CONSTRUCTION RECONIZED BY FEDERAL GOVERNMENT

In an interview given the "Washington Herald," Mr. James Knox Taylor, Supervising Architect of the Treasury Department, said, referring to the dangers in the use of reinforced concrete construction: "I would favor the further use of reinforced concrete in the construction of Government buildings if it were possible for us to get a sufficient number of expert superintendents to take charge of the work. It requires careful and expert watching. I am afraid that we shall always encounter, or for a long time at least, the same difficulty that we find now in its use, namely, that while we can easily get superintendents, we can not get a large enough number of them who are highly trained in the use of concrete. There is too much danger in the indiscriminate use of concrete to permit us to try to make it a common material in the construction of Government buildings unless, or until, this danger can be in some way eliminated." Mr. Taylor is the highest functionary in the United States Government, as far as building construction is concerned, and his opinion is of great value. In this case it is simply a reiteration of what so many experts have contended. Reinforced concrete is a most attractive-made construction theoretically, and splendid results have been attained—from laboratory tests. But it is so variable a quantity, and is so susceptible to tribulations in its handling, that, spite of the arguments of its votaries, the gentlemen who have cement to sell, it is the most unsafe medium of construction known. All other materials are completed and can be subjected to tests, and are, in a degree, tested in handling before being brought upon a building, while reinforced concrete can only be tested after the structure is completed, when it is usually too late to remedy the defect. The large number of concrete collapses further illustrates this point. Another Government officer, Engineer Humphrey, of the Geological Survey, (who, by the way, is also president of the cement organization, which fact gives still greater force to his statement) adds that after an examination of most of these collapsed concrete buildings, he is convinced that certain inherent troubles existed in them all, and he fears that similar troubles exist in many that have not yet collapsed, and avers that it seems a miracle to him that more concrete buildings have not collapsed.

ARTISTIC BRICK WORK

The "Architectural Record" of September editorially comments upon the possibilities of brick construction. It calls attenion to the value of brick as a structural material and as a fire-resistant, showing how it has been used in places where heavy and difficult construction is called for, and points to the excellent state of preservation of the brick buildings that passed through the Baltimore and San Francisco fires. It adds that it would be difficult, in fact, to name a better structural and protective building material which presents, at the same time, so many advantages to the decorative artist. It comments upon the fine appreciation of burnt clay that existed at the time of the Assyrian ascendency, and traces the use of artistic brick work all down the history of nations to our own time.

For years in this country brick buildings were resorted to where the expense of stone and granite and marble barred the use of these materials; it was looked upon as of secondary nature. That time has gone. Today brick is regarded as an indefinitely better material structurally than is any of those others, and its beauty and adaptability are rapidly becoming keenly appreciated by our architects. Instead of being a mere substitute, it is used today in preference to everything else. The manufacturers of brick have absorbed this artistic spirit and amply second architects' efforts. Brick are made in all kinds of shapes and colors, and beautiful effects are obtained by the use of even the roughest products, that, a few years ago, were used only in foundations, rear walls, and in such inconspicuous places. We have indeed reached a burnt clay period. Our ablest architects are not only designing their most beautiful decorative work in fine terra cotta, but are seeking, particularly in domestic architecture, to make all of the exterior of brick, using the different colors and working up the patterns into quaint and attractive designs; and the result is that all over the country we see beautiful buildings of brick that will equal the work executed in that material, and equal to anything that has been done by the English or the Flemish or the Assyrian architect, and far more dainty and pleasing and artistic than the nearby work that has been wrought, at infinitely greater expense, in granite and marble and stone.

ANCIENT CONCRETE

Some concrete experts love to dwell upon the assumption that their ideas and theories are based upon well established precedents and that the skillful Roman builders of old already recognized the value of concrete as a structural material. A writer in the American Architect has evidently dug into history and gives us the following that may not be exactly what our concrete friends, the enthusiasts would like to believe.

"Ancient Roman buildings offer no precedent for this problem. The so-called concrete of the Romans, though structurally fulfilling many of the same functions as modern monolithic concrete, was quite differently made, being composed of alternate layers of cement, mortar and small stones carefully laid by hand. Some of the smaller vaults seem to have been of almost pure cement, and to this day show the grain of the chestnut boards used as centerings or molds. But the Romans always built up their concrete walls and piers between facings of brick; and the huge vaults of the Pantheon and some of those of the Baths of Caracalla were laid upon *a complete inner shelf of careful brickwork.* The Assyrian palaces were built of soft unburned clay bricks which dried under the pressure of their own weight into uniform homogeneous masses; but these walls appear to have been for the most part faced with slabs of alabaster or limestone and flat enameled tiles. The past offers no exact analogy to the problem under discussion, and its solution must be worked out by experiment, like all other aesthetic problems, under the guidance of common sense and good taste."

The above is quoted from an issue of the American Architect, devoted exclusively to concrete, and it is rather interesting to note that that journal says editorially in the same number: "Finally, it must always be kept in mind that concrete, while a serviceable fireproofing mixture, is not itself fireproof, and that in certain positions it must be protected by other fireproofing, whose function it shall be to absorb into itself the inevitable disintegration due to impinging flame—or flame and water in alternation."

SIGNIFICANT OF DRAFTS IN STEAMBOILER-PRACTICE

Engineers of the United States Geological Survey express the opinion that is is possible to double or treble the capacity of a steaming plant without making any radical changes in furnaces or boilers, the increase requiring that about double or treble the quantities of air be put through the fuel beds and boilers. The basis for this opinion is set forth in a report by Walter T. Ray and Henry Kreisinger, which has just been published by the Survey as Bulletin 367.

This bulletin is announced as the first of a series of two or three on the significance of drafts in steam-boiler practice, the succeeding bulletins to follow the same lines, but to be of more advanced character. The conclusions presented are tentative, and are the result of a study of one of the many problems growing out of the general plan of the Survey to increase the efficiency with which the coals of the country are being used. Greater efficiency requires better boiler and furnace design, and means a conservation of the fuel resources of the country.

The experiments reported in Bulletin 367 were undertaken with the object of clarifying ideas concerning the passage of air through fuel beds and boilers. Measured weights of air were passed through two beds of lead shot, in series, one of which remained always the same and represented a boiler, the other being varied as to size of shot and depth of bed and representing a fuel bed. Careful observations were made of the weight of air passing through the beds per minute, and all data were platted on many charts, so as to permit the study of them from various points of view. A number of laws were deduced bearing on the relative amounts of power required to force air through fuel beds of various thicknesses, composed of various sizes of coal, and through boilers of various lengths and areas of gas passage.

To test the applicability of these laws, they were compared with the results of a number of practical experiments made at the St. Louis fuel-testing plant with boilers of the standard hand-fired Heine type, and the principles developed were also studied in connection with the results of certain locomotive tests made at the Norfolk testing plant of the Survey. These various tests and experiments are fully described.

As a result of these investigations the authors believe it may be possible to raise the rate of working the boiler heating surface to three or even four times its present value. Such an increase would undoubtedly mean new designs of grates, stokers, furnaces, and boilers, especially fitted for high rates of working. Fan equipments designed to supply three or four times as much air under several times the pressure would be provided with more efficient engines—an additional factor favoring high-capacity working.

WAGES FIXED BY NEW YORK BUILDING TRADES

Wages for more than 80,000 skilled mechanics in the building trades in New York City were fixed for the year at a meeting of the business agents of the various trade unions. The wages, based on an eight-hour workday, were fixed as follows for the more important trades:

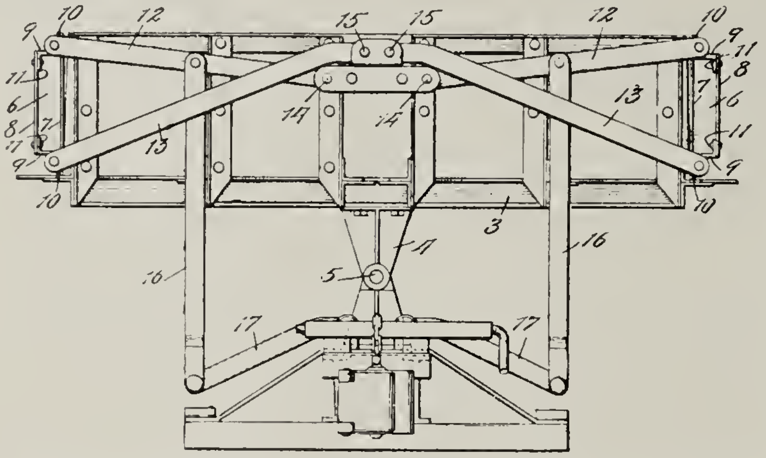
Boilermakers and iron shipbuilders, $5; carpenters and framers, $5; cabinet makers, $4; cement and concrete masons, $5; electrical workers, $4.50; housesmiths, bridgemen, iron workers, $4.80; metallic and wood lathers, $4.50; marble cutters and setters, $5; machinists of all descriptions, $4.50; plasterers, plain and ornamental, $5.50; plumbers and gasfitters, $5; painters, $4; decorators and gilders, $4.50; sheet metal workers, coppersmiths, tinsmiths, metal roofers, $4.50; stonecutters, $5; steam and hot-water fitters, hydraulic, pneumatic tube, etc., $5.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

905,222. Gate for Dump-Cars. Thomas R. McKnight, Aurora, Ill., assignor to Western Wheeled Scraper Company, Aurora, Ill., a Corporation of Illinois. Filed May 13, 1908. Serial No. 432,622.

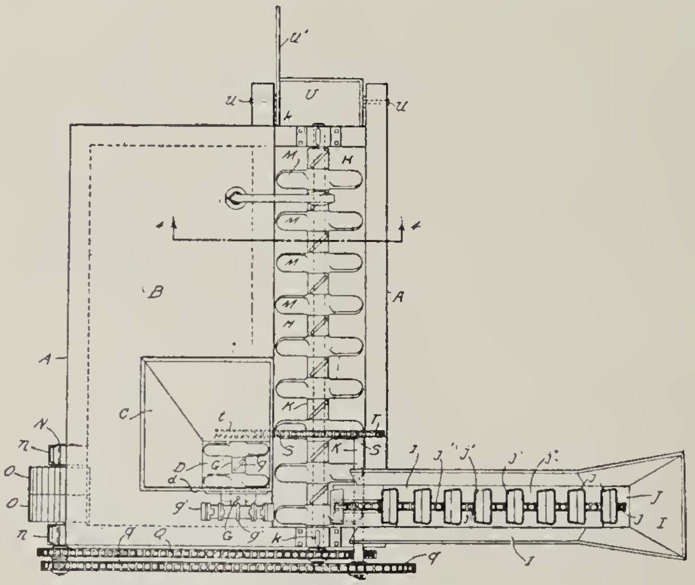
Claim—The combination of a car-body, a gate comprising separated parallel plates fixedly connected together, and means pivotally connecting the end portions of the gate with the car-body so that it may be swung into and out of operative position.



The combination with a dump-car, of a gate comprising plates set a distance apart, bars secured to the side edges of said plates and serving to rigidly connect them together, and means pivotally connecting the end portions of the gate with the car-body so that it may be swung into and out of operative position.

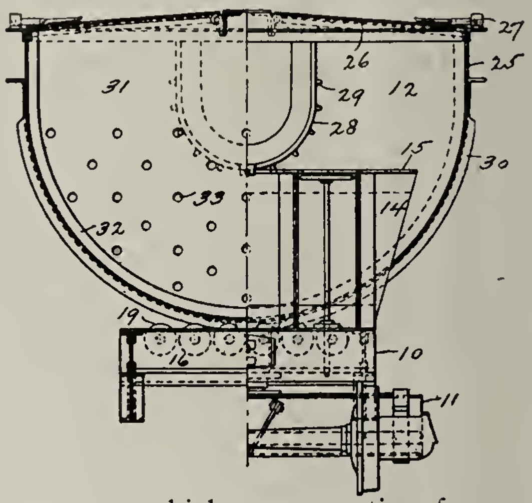
905,375. Mixing Apparatus. James C. Shreffler, Chicago, Ill. Filed Oct. 17, 1907. Serial No. 397,801.

Claim—The combination of a cement pulverizing chamber provided with a discharge opening, a rotatable shaft, movable beaters in the chamber, such beaters mounted on the shaft and arranged to agitate the contents of the chamber and to force such contents towards the discharge opening, a cement hopper arranged to discharge into the pulverizing chamber, an adjustable gate to control the discharge opening of the chamber, a mixing trough, removable paddles on the beater shaft outside the chamber and arranged to deposit cement which has been discharged from the pulverizing chamber into the mixing trough adjacent to the receiving end of such trough, a sand hopper, and a conveyer arranged to deliver a determined quantity of sand from the sand hopper into the mixing trough adjacent to the receiving end of such trough; substantially as described.



906,088. Dump-Car. Samson D. Wright, Cleveland, Ohio. Filed June 24, 1908. Serial No. 440,108.

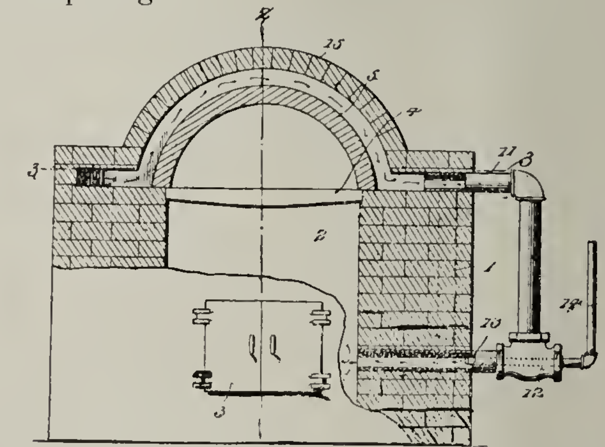
Claim—In a dump car or vehicle, a supporting frame, and a body having a rounded bottom portion, said frame having uprights or standards on which the body is supported at its ends and on which it may be rolled, and roller supports for the body intermediate its ends.



In a dump car or vehicle, a supporting frame, a car body having a rounded bottom and rounded supporting projections at its ends, said frame having supports on which said rounded projections bear and roll when the car body is being tilted, and roller bearings engaged by the car body intermediate its ends during the rolling operation.

906,174. Kiln. Wilburt Ward, Mitchell, Ind. Filed Apr. 3, 1908. Serial No. 424,925.

Claim—In a furnace for kilns, the combination with end and side walls, of an ash-pit, a grate extending over the ash-pit, an arch extending over the grate, a plurality of partitions extending over the top of the arch, said partitions extending alternately from the side walls of the furnace and forming a tortuous passage over the top thereof, a second arch extending over the top of the partitions, a connection between the end of the passage at the front of the furnace and the ash-pit whereby air may pass from the passage to the ash-pit, and one of the side walls of the furnace being provided with an opening connected to the rear end of the passage.



In a furnace for kilns, the combination with end and side walls, of an ash-pit, a grate extending over the ash-pit, an arch extending over the grate, a plurality of partitions extending over the top of the arch, said partitions extending alternately from the side walls of the furnace and forming a tortuous passage over the top thereof, a second arch extending over the top of the partitions, a pipe leading into the ash-pit, a pipe extending from the end of the passage at the front of the furnace, an injector connecting said pipes, and one of the side walls of the furnace being provided with an opening connected to the rear end of the passage.

PACIFIC COAST NEWS ITEMS

Active building operations have been practically suspended in San Francisco during the past week on account of the heavy rains, and bricklayers have been especially affected as their work is almost all on the outside. During the previous month, however, construction work was not interrupted and an unusually large amount of work was done. It is the intention of contractors to take advantage of every fair day and it is anticipated that more work will be done this winter than has ever been known here before during this season of the year. Building permits for the month of December were considerably smaller than they have been for some time, but it is customary for a falling off in this respect to be noted during this month. The contracts for building signed during this month totaled $3,223,201, practically twice the amount of the permits, and from this it is to be judged that active operations are planned for the immediate future. Of this amount, $1,594,535 is for brick construction work and this does not include the immense amount of work of this character that is to be done by the city. According to the figures compiled by the California Promotion Committee there has been expended for brick construction, exclusive of the municipality, more than $60,000,000 since the fire, and of this sum $16,700,000 was spent during the year just closed. Now that the downtown section of the city has been fairly well supplied with store and office structures, particular attention is now being paid to the erection of warehouses and large buildings for manufacturing purposes. The immediate result of this is an increased call for common brick and a lessening of the demand for the more fancy varieties. Makers of the better grade articles, however, claim that there will be a demand for their product from the builders of apartment houses and hotels, large numbers of which will be erected this spring. They are not decreasing their output in the least and expect to have a market for all the goods that can be made ready within the next three months.

There is but little change to note in the prices of brick in this market. The upward tendency that was noted in common brick last month appears to have reached its climax and this grade is now selling uniformly at $8.50 at the wharves or on the cars. This price is not entirely satisfactory to many makers who claim that the margin of profit is too small, but there seems to be nothing in sight at the present time that would warrant the raising of this rate on the part of the dissatisfied ones. Some of the plants have closed down their works, but most of them are operating, though not many of them are running to their full capacity.

The razing of the old City Hall has commenced, but the work is being delayed by injunctions that are being secured by parties who prefer to see the ruins standing as they are. There is an immense amount of brick in this old structure and it is likely that this will be on the market when the demolishing of the building has been completed. It has been suggested that the city take this brick and use it in sewer construction, but according to the contract with those who will tear down the part of the structure that is to be razed now, all the material goes to the contractors. Most of the sewers that are now being constructed are being made of re-enforced concrete with a lining of vitrified brick. Most of the brick used to date has been furnished by the Carnegie Brick Company.

Colored tiling is meeting with special favor here now and many buildings that are being planned for the immediate future will be faced with this material.

The Carquinez Brick Company, with offices in the Russ Building, in San Francisco, is planning to practically double the capacity of its plant near Port Costa. About a million brick are turned out each month and these have been disposed of with but little difficulty. Cheap water transportation to San Francisco makes this plant an economical one.

After a shutdown of several weeks on account of repairs to the big smokestack, the plant of N. Clark & Son, at Pacific and Fourth streets, Alameda, Cal., has resumed operations again. This firm makes a specialty of pressed brick and has contracts now on hands for a large quantity of this article. Brick will be supplied for a number of municipal buildings, among which will be the new Hall of Justice, at San Jose, and the County Jail at Sacramento.

The plant of the Vallejo Brick & Tile Co., at Vallejo, Cal., is being put into shape for operations in the immediate future, and preparations are being made for a busy season. This firm has established its San Francisco offices in the Santa Marina building at California and Drumm streets.

The Richmond Brick Company has moved its offices from 161 Sacramento street to the new Koshland Building at 110 Market street.

D. Madigan, a brick manufacturer of Chico, Cal., is preparing to establish a new plant near that place.

The Union Brick & Tile Co., of Santa Monica, Cal., is in financial difficulties and has been adjudged bankrupt.

The Oroville Brick Company is making preparations to establish a plant at Chandon.

The Jacksonville Brick & Tiling Co., has been incorporated at Jacksonville, Ore., and it is the intention to establish a plant near there in the immediate future.

The Hilton Brick Company, which operates near Santa Rosa, Cal., has just secured possession of a new bed of fine clay near its works and will open again soon on a larger scale than ever.

A new brick plant is being established at Kings City, Cal., by the Kings City Brick and Tile Co. It is claimed that the article produced there is a very superior one and plans are being made to ship the product to the large cities of the state.

The Denny-Renton Clay & Coal Co., with headquarters at Seattle, Wash., is preparing to establish a brick making plant on some of the properties controlled by it.

JUDGEMENT REVERSED AND A NEW TRIAL ORDERED

The Appellate Division of the Supreme Court has filed a decision in the case of Minnie Adlin, as Administratrix, etc., of Elimelech Adlin, deceased, plaintiff, vs. The Excelsior Brick Company, of Haverstraw, N. Y., and others, defendants. Judgment reversed as to the defendant the Excelsior Brick Company and new trial granted, costs to abide the event, and affirmed as to the other defendants, with costs.

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS

The Thirty-First Annual meeting of the Illinois Clay Manufacturers' Association will be held at Champaign, January 19, 20 and 21. Headquarters at Beardsley Hotel.

The Ninth Annual Convention of the Wisconsin Clay Manufacturers' Association will be held at Milwaukee, Wis., February 10, 11 and 12th. Headquarters at St. Charles Hotel.

The Eleventh Annual Convention of the American Ceramic Society will be held at Rochester, N. Y., Feb. 1st, 2nd and 3rd, 1909.

The Fourth Annual Convention of the National Paving Brick Manufacturers' Association will be held at Rochester, N. Y., Feb. 1st and 2nd, 1909.

The Twenty-Third Annual meeting of the National Brick Manufacturers' Association will be held at Rochester, N. Y., Feb. 1st to 6th, 1909. Headquarters at Seneca Hotel.

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A wise man ceases to be wise when he begins to boast of his wisdom.

A good product pushed by good advertising—that is the formula for success.

It's a good thing to have opinions—and it's a good thing to keep the lid on them sometimes.

The donkey is unable to talk. Therefore man has indisputably proclaimed himself lord of creation.

As long as a man is willing to pay the freight he can always find a crowd standing around waiting to give him the glad hand.

Advertising has been the first principle of every success in business since business began—advertising of one kind or another.

Did you send in your subscription to the CLAY RECORD; If not it is not too late now. It is the only paper devoted to the Clay industry that is printed twice each month, and costs the small sum of one dollar. If almost any of the issues are not worth a dollar to you, you are getting in a pretty bad way. Next issue we will commence a verbatim report of the Illinois Clay Manufacturers' Association meeting, which was held at Champaign. One of the best state meeting ever held in this country .

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MAINE BRICK OUTPUT SMALLER

The production of brick in local yards in 1908 fell off several millions, owing to the business depression. The Bangor Brick Company last year manufactured 3,000,000, or 2,000,000 fewer than in 1907, while the Brewer yards were also behind their former output. The Brooks Brick Company made 3,000,000, Getchell Brothers 1,000,000, John McDonald 1,000,000 and Hugh O'Brien 500,000, making a total of 8,500,000 brick turned out last season—of which 5,500,000 were made in Brewer yards. The price declined, also, about $1 per thousand, face brick selling last year at $10 per thousand and the "run of the kiln" for $6.50. A busy season is expected this year, as building operations promise to be brisk all over Maine.

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THE NEW YORK BRICK MARKET

Bricks are made of earth, air, fire and water, and none of them or their combination destroy the well made brick, writes President Hammond, of the Hudson River Brick Manufacturers' Association. He resides at Duchess Junction.

The brick, during its manufacture, requires a continuous heat of from 1,500 degrees to 2,200 degrees, day and night, for a week. So you understand why bricks are not destroyed by fire occurring in any building where they are used, and it may not be amiss to state that a brick may be taken from a burning kiln, where the heat developed is at least 2,000 degrees, and plunge that hot brick in water with no change to the brick in its form or strength. When a mortar that shall be fire proof and will bond is at last produced, then its use with brick will produce you the walls of a fire proof building.

The brick business, i. e., the return in money to the manufacturer and the jobber or material supply man in the greater city for 1908, has been far from satisfactory. Prices have been low, demand until the second week in November light, and not more than 60 per cent for weeks at a time of the demand which it is necessary to allow the manufacturers on the Hudson in order to keep their plants actively running. Fifteen per cent of the plants were not running actively and many others at only partial capacity. A few ran to the limit, yet the quantity of bricks now under sheds in storage at the manufacturers various places are equal to the improved demand which has begun since election, and the indications are for a larger demand and a fuller supply than for some years past.

Prices cannot soar to unreasonable rates, no matter how great the demand may become, as the plants are all in readiness for instant use when the price is advanced to cost of production; and with the prospect of a good demand, every manufacturer will start his machinery and begin producing for the greater city of a building material which will, when properly appreciated, make the finest, strongest and cheapest (i. e., lowest cost) permanent structures in the world. There are plenty of brick, and to be had at prices that will net a profit to owner and builder, as it has for 1908, and except for owner and builder in the two boom years of 1905-1906, as it did previously for years.

FIRE! FIRE!! FIRE!!!

The Edgewood Brick Tile Works at Edgewood, Iowa, owned by S. B. Gleason, was destroyed by fire entailing a loss of $3,000. Mr. Gleason carried $2,000 insurance.

Fire broke out in the office of the Baltimore (Md.) Terra Cotta Works, Clement and Covington streets, and destroyed all the books, receipts and other articles. The property loss is covered by insurance.

OBITUARY

Elmer I. Hughes, one of the best known pottery salesmen of the country, died at Trenton, N. J., of gastritis. He was 46 years of age and leaves a widow and a daughter.

Byron W. Robinson, president of the Robinson Clay Products Company, Akron, Ohio, is dead. He was 48 years of age and a very prominent business man in Ohio. He leaves a widow and six children.

Edward N. Richards, son of the late Alfred Richards, formerly a well known brick manufacturer of Washington, D. C., died at his home, 45 D street. He was 33 years of age. He was stricken by paralysis two years ago.

John S. Goodwin, aged 37 years, for 12 years general manager of the Goodwin Pottery Company, at East Liverpool, Ohio, died at his home in that city. He came from a family of Potters, his grandfather, John Goodwin, being a pioneer of the West. He leaves a wife and two children.

ACCIDENTS, DAMAGES AND LOSSES

The large stock of the Lamar (Colo.) Brick & Stone Co., was wrecked by the wind and caused a severe loss to the company.

Two thousand dollars damages were given to Jesse Casteel, who was hurt at the plant of the Pittsburg (Kansas) Vitrified Brick Co.

Louis Frank was seriously injured by a mass of shale falling upon him in the clay pit of the Tuna Valley Pressed Brick Co.'s plant at Lewis Run, Pa.

Louis Oberst, son of a prominent brick manufacturer, Owensboro, Ky., was probably fatally injured by a city scavenger team in a runaway accident.

L. L. Ponsler has been appointed receiver of the LaHarpe (Kan.) Shale Brick Co. The plant recently burned to the ground and the stockholders decided to liquidate.

The first meeting of the creditors of the Northeastern Terra Cotta Co., Bradford, Pa., was held in the office of Thomas B. Wilson, referee in bankruptcy, January 11th.

An involuntary petition in bankruptcy has been filed against the Beaver (Pa.) Valley Roofing Tile, Brick and Terra Cotta Co., by C. D. Heine and others, creditors to the amount of $6,000.

The Chesapeake Brick Co., of Baltitmore, Md., has been asked to be placed into the receiver's hands by John Hiltz, a stockholder, claiming the plant is idle and going to decay and its assets dissipated.

Mandeville Hall, formerly of Perth Amboy, N. J., son of William Hall, a terra cotta manufacturer, was sentenced to 13 months in prison in Paris for passing worthless checks on the Credit-Lyonnais.

The Empire Brick Co.'s plant at New Albany, Kansas, which has been shut down for six months, has been attached and Sheriff Timmons has been appointed receiver. The company is owned by Joplin, Mo., parties.

Two suits for $10,000 each have been filed against J. M. Beale & Co., Paw Paw, Ill., for damages and loss of life of Louis and Arthur Boyers, two workmen killed by the explosion of the boiler in the brick and tile works.

CHICAGO LEADS THE WORLD

The Northwestern Terra Cotta Company has the largest individual plant in the world for the exclusive manufacture of architectural terra cotta. The growth of its business is due to the fact that it has perfected the manufacture of terra cotta to such an extent that it is practically as true as stone, and that it is today able to produce almost any color or texture which architects or their clients should desire.

The following are a few of the five or six hundred buildings for which this company has furnished the terra cotta in 1908:

Mahoning Co. Court House, Youngstown, Ohio; Hotel Monteleone, N. O. Blake Building, Boston; Gila Valley Block, Globe, Ariz.; St. Louis Co. Court House, Duluth; Woodward High School, Cincinnati, Ohio; Bank of Nova Scotia, Kingston, Jamaica; General Electric Co., Toronto, Can.; Pope Building, Cleveland; Soldiers' Memorial, First National Bank, School of Mines, Pittsburg, Pa.; Scanlan Building, Houston, Tex.; North Division High School, Denver; La Salle Hotel, Princess Theater, Bowen High School, Carl Schurz School, and many garages in enameled terra cotta.

DRYING BRICK BY ARTIFICAL METHODS

The Garner Brick Company, Haverstraw, N. Y., the only brick firm along the lower Hudson that manufactures Haverstraw's famous product in the winter season and dry brick artificially by means of steam heat, has a machine operating continuously, with a capacity of 50,000 brick per day. The operating of this winter brickmaking plant is entirely different from the method used in the summer.

Wheelers are entirely eliminated and in their stead are substituted a double-wire cable carrier that carries the brick into the drying room, the same cable being utilized for the carrying of the dried brick to the kiln grounds, where they are loaded in barrows, preparatory to being wheeled for burning.

From practically the time of its establishment to the present, brick have been put out uniformly with six brick moulds, and usually handled in sixes, but the introduction of the new mould has changed the entire system. This mould, while practically no larger, is enabled to take seven bricks by reduction in the size of the material used in the mould's construction. There is less shrinkage in brick dried artificially than there is in those dried in their natural atmospheric conditions.

The seven-brick moulds will make a revolution in the brick business, as in each mould an extra brick is manufactured. Or, in other words, the capacity of the machine is increased one-seventh of its total product.

The brick when taken from the drying racks are placed on the carrier, and, instead of being dumped green on the barrows from back toward the handles, are dumped from the bottom upward. This is made possible because brick thus manufactured are never placed on edge, the same as other brick are.

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CHINESE WILL GO TO CHINA TO LOOK OVER BRICK-MAKING FIELD

Billy Kee, the Lombard, Mont., Chinaman who made a fortune running a hotel at that railroad junction returned to China a few weeks ago to claim a fortune which he had inherited upon the death of a rich relative several months ago. Kee made a fortune in this country and owns much ranch land in the Lewistown country. On this trip to China he will investigate the money-making possibilities of an American brick-making plant in his native land, and if the outlook is satisfactory he will return to the United States next summer, purchase the most modern brick-making machinery and establish the first plant in the empire, near Hong Kong.

Kee, upon several trips to China, has been looking for an opportunity to embark in business there, and the brick-making business he believes offers the greatest chances of success. The Chinese now use the most primitive methods in the manufacture of the useful building material, and Billy Kee is certain that with an up-to-date plant he can add greatly to the wealth he already possesses.

The Chinese boniface is enthusiastic over his latest project and declares that if it is successful, of which he has not the slightest doubt, he will never engage in the hotel business again. For months past he has been studying modern methods of making terra cotta and brick, and he believes that the Chinese contractors will take kindly to the product of a modern brickyard.

NEW ENGLAND COMPANY IN BARRINGTON HAD SUCCESSFUL SEASON

The factory of the New England Steam Brick Company of Barrington Centre, R. I. is shut down for the winter after a busy season.

The fact that the manufacture of brick in extremely cold weather is practically impossible is the only thing that prevented the company from running its plant on full time through the winter months. On account of the many orders on hand the shutdown this year instead of lasting until April 1 as usual, will last only until February 1.

The concern has orders ahead for 10,000,000 brick. One contract alone calls for the delivery of 5,000,000 brick for the new City Hospital of Providence. The winter shut-down will not be a complete one, for fully 100 men will be kept at work all winter loading and shipping brick.

At the time the plant stopped operations more than 200 men were employed. The plant has run full time during the past year and at frequent intervals has run on double time, employing between 250 and 300 men.

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HOLLOW-BLOCK DWELLING IN NEW BRUNSWICK, N. J., BUILT AT COST OF $3,300

To defend himself against the "fire fiend," a resident of New Brunswick, N. J., has built him a home of terra cotta. This material, common enough for fireproofing big business buildings, has only recently begun to be used for dwellings. Its adoption for such a purpose is partly due to the growing scarcity of the lumber supply.

The terra cotta is in the form of hollow blocks. The partitions, as well as the outside walls of the New Brunswick house are made of them so that it would be well nigh impossible for a fire to spread from one room to another. The hollow spaces made the blocks non-conducters of heat with the result that the house will be warmer in winter and cooler in summer than if the walls were built of wood or brick.

In this fireproof house, two stories in height, there are six rooms besides a bath and various closets. Including plumbing, gas and electric fixtures, and range boiler, the total cost of the building was about $3,300.

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NEW BRICK YARD FOR INTERNATIONAL FALLS

Bemidji, Minn., Jan. 12—"It is possible that the Red River Valley Brick Company of Grand Forks, N. D., will take hold of a brickyard proposition at either International Falls or at Fort Frances, across the river from International Falls, in Canada," says A. I. Hunter, president of the Red River company, who was at Bemidji on his return trip to Grand Forks from International Falls, where he went to look over the situation.

Speaking of the trip to the boundary towns, Mr. Hunter said that he had looked over the brick situation thoroughly, both at International Falls and Fort Frances; that a party at Fort Frances had started a brickyard and had a splendid outfit, and that it was likely that he would recommend to his company associates that they take over the Canadian property and operate the same, as there would be a big demand for brick in both towns for some years to come.

ANOTHER BIG WORKS FOR YOUNGSTOWN

A special states that papers of incorporation were issued in Columbus to the Interstate Brick company of Youngstown, O. Early next week will be held a meeting of the stockholders, when a board of directors and officers will be selected. The company was organized and incorporated by Walter L. Kauffmann, Robert Bentley, M. S. Logan; H. T. McCartney and Frank D. Zug. The capital stock is fixed at $100,000.

It is the purpose of the company to manufacture a high grade of building and paving brick such as is at present being placed upon the market by the Bessemer Company.

The Interstate Brick Company owns an extensive deposit of a superior quality of shale which is located on the property of the Carbon Limestone Company at Hillsville, Pa., just across the Ohio state line between Youngstown and New Castle.

Although the company has not yet definitely fixed its plans it is stated that a modern brick producing plant will be built with a capacity equal to that of any other like concern in this section of the country. Plans for the plant will be adopted at the above referred to meeting of the stockholders and no unnecessary delay will interfere with the beginning of the work of construction.

GRAND LEDGE SEWER PIPE COMPANY LOOKING AHEAD TO BIG BUSINESS

W. F. Dunspaugh of Pittsburg, one of the heavy stockholders of the American Sewer Pipe Company, says that the capacity of the Grand Ledge, Mich., plant will without doubt be increased, some say doubled, within the next year. A new clay mill will be installed with the coming of spring and other corresponding improvements made, so that this will be one of the most efficient, if not the largest of the 25 or more factories controlled by the trust.

The tramway from the factory to the clay pits is partly built, but operations for this season were suspended about the first of the present month, to be resumed again with the coming of spring and bare ground.

Mr. Dunspaugh, who is one of the big men of the American Sewer Pipe Company, and incidentally a millionaire, is a rather large jolly man, who has frequently made visits to Grand Ledge within the past year. It was Dunspaugh, more than any one else, who decided the matter of increasing the capacity of the local factory instead of abandoning the place, as they have done with some of their plants in Ohio.

GRINNEL COMPANY HAD FIRST SUCCESSFUL YEAR

The Grinnell Brick & Tile Co., of Grinnell, Iowa, have just closed their first year of successful operation under the management of Mr. Wm. H. Shaw. The company was formed some three years ago with $50,000 capital stock, but has never been made to pay until the past year, when Mr. Shaw was procured from Des Moines. Not only have they been able to dispose of their entire product, but at an advanced price over their competitors owing to the excellent quality. They are remodeling the kilns and drying system and will install new machinery needed to meet the ever increasing demand for their products.

BRICK STOPS FIRE BETTER THAN CONCRETE

The good old brick, which has been shoved back to second or third place as building material since the advent of reinforced concrete and tiles, found a vigorous champion at San Francisco, Cal., in T. J. A. Tiedemann, who addressed the Fire Underwriters of the Pacific on building construction and rates.

As fire-resisting material Tiedemann gives brick first place and produces the evidence to prove it. In consequence he believes that in the fixing of rates buildings with brick walls should be given a more favorable premium than tile or reinforced concrete. As it is, there is no difference in the rates.

In this connection Tiedemann expressed the belief that a brick foundation could be as good as or better than concrete and gave instances of foundations recently dislodged which were perfect, although in wet ground for over forty years.

The cause of the appalling increase in fire losses in this country he attributes to poor wiring. "Boys and novices put in the wires in the most haphazard way," he said, "and the inspecting is a joke. Our construction laws in this regard, as in others, are too often lax and are practically never enforced properly. Our losses in this country, in spite of our flimsy construction, could be lessened 50 per cent if the building laws were properly enforced."

MADE PRESIDENT OF DUBOIS & BUTLER BRICK COMPANY

At a meeting of the directors and stockholders of the DuBois and Butler Brick Company, held in DuBois, Pa., Donald McDonald, a well known resident of Butler, was elected president and general manager of the company. Mr. McDonald has been closely identified with the company since its inception several years ago and is recognized as one of the most expert brick men in the state.

The DuBois and Butler Brick Company, of which Mr. McDonald has been made head, is one of the largest brick manufacturers in the state, operating two big plants, at Falls Creek and Cowansville, respectively. The Falls Creek plant has a daily capacity of 60,000 and is devoted exclusively to the manufacture of fine face brick, while at the Cowansville plant, with a daily capacity of 80,000, paving brick of various kinds are made. The company has been most successful, their products being used in practically every city within a radius of 200 miles. The year just ended has been a most successful one, shown by the reports submitted by the superintendents of the two plants and sales department, and it is probable that during the present year both the Falls Creek and the Cowansville plants will be materially enlarged.

Mr. McDonald has held the position of manager of the Cowansville plant and district sales agent of the company for this section of the state for the past eight years. His promotion to the head of the company comes as a recognition of his unusual executive ability, coupled with his complete knowledge of the manufacture of the products of the company. The headquarters of the company are at DuBois and it is probable that Mr. McDonald will later remove his family to that city.

REPORT OF ILLINOIS BRICK COMPANY

The Illinois Brick Company is constructing the most modern brick plant in Chicago or vicinity, at Shermersville, on the St. Paul road. The new plant will have a capacity of 65,000,000 brick a year and will represent an expenditure of $100,000. It is to be completed and ready to go into operation March 1.

With this plant the company will be in good shape to make and sell brick at the market price. Recent experience has shown that it is necessary to adopt every improvement possible in order to make more brick at a less cost than heretofore in order to make money. The old plant at that place was erected the World's Fair year at a cost of $60,000, and, although it was thoroughly modern at that time, it has since become obsolete.

The old plant was torn down and the new works are being erected on the site.

The brick company has passed its January dividend. The management does not claim to have established a regular quarterly dividend, but 1 per cent was paid each quarter of 1907, and until the June dividend was passed in 1908. In October, 1908, 1 per cent was again declared.

President Howell states that the dividends already declared practically absorb the surplus earned the past year and that the company is engaged in extension work requiring considerable expenditure.

The dividend could have been paid from surplus, but it was considered a conservative plan to put the surplus into extensions rather than pay it out in dividends.

CLAY SUPPLY GONE AND THE PRISONERS IDLE

More than fifty millions of brick have been manufactured by Toledo, Ohio, workhouse prisoners in the past twenty years. Perhaps the city administration, however, will have to go out of the brick business.

To make brick one must have clay. Vacant property near the workhouse has been the field that has been worked. The field is closing up because of building operations.

Before long some other outlet for the surplus energy of prisoners must be found. These winter days the prisoners run around in a circle, as this is the closed season for brick making. Prisoners prefer work to idleness.

Brick has been manufactured for more than twenty years at the workhouse, and sold at a lower price than outside brick makers could manufacture and sell it, it is asserted. Nature supplied the power and there was no labor cost.

RECEIVER OF CLAY MANUFACTURING COMPANY DEMANDS ACCOUNTING

As receiver of the Oudin Clay Mining and Manufacturing Company, F. P. Weymouth filed a complaint in the superior court at Spokane, Wash., asking that Charles P. Oudin and wife be called to account for money and property of the company which he alleges they have diverted to establish a rival concern. The Oudins have a half interest in the Oudin company.

It is alleged that in order to get the exclusive control of the business they organized the American Fire Brick Company and transferred to it all the trade and much of the property and funds of the old concern, causing it to become insolvent.

* * *

At Humboldt, Kansas, the Humboldt Brick Mfg. Co., by adding new machinery and new methods of getting shale to the plant, has increased its output very materially. The Cleveland Brick Co. also report a successful year. New kilns have been added and an increased business is expected.

MINERAL PRODUCTION AND AGRICULTURE

The forthcoming volume of "Mineral Resources of the United States," published by the U. S. Geological Survey, will show a remarkable increase in the value of the mineral production of the country since the beginning of the new century. This increase includes all of the principal mineral products, representing an annual output of over $2,000,000,000 (billions)—an advance of more than 100 per cent in less than ten years.

Commenting on this phenomenal increase, George Otis Smith, the Director of the Survey, stated it as being yet the more impressive when compared with the recent optimistic statement of the Secretary of Agriculture to the effect that taking 100 as the basis for the value of the farm products of 1899, those of 1907 had increased to 159 and those of 1908 to 165. The figures for the mineral production of 1908 are not yet available; but assuming the value of the product of 1899 to be 100, as in the case of agriculture, that of the 1907 mineral product was 204, or more than double.

The following table shows the relative growth of the values of farm and mineral products in the United States since 1899.

VALUES OF FARM AND MINERAL PRODUCTS

YEAR	FARM	MINERAL
1899	100	100
1900	...	109
1901	...	113
1902	...	130
1903	125	147
1904	131	134
1905	134	160
1906	143	188
1907	159	204
1908	165	...

With both the products of agriculture and the mines advancing at this rate it would seem that the country as a whole has little to fear from occasional slight business depressions. While these have their disquieting effects, of course, upon many industries, they cannot produce really serious results, from the national standpoint, when such stable factors in the nation's life as agriculture and mining show such great material development.

TUCSON CLAY STANDS THE TESTS

Active preparations are going on for the plant of the Tucson, Arizona, Pressed Brick Company, which will be erected near this city to handle the clay which has been discovered in the Tucson mountains near the place where the Saginaw road branches off from the San Xavier road around the mountain.

It is understood that the company will expend about $25,000 in machinery for the brick plant and that it will be equipped with the latest apparatus and will turn out an excellent quality of brick. The company is made up of Tuscon people.

The claims on which the clay will be secured are owned by Councilman Quintus Monier and Joseph Graf. Samples of the clay were sent East for a test and the returns showed that the material contains all of the ingredients for making high class brick.

It is the intention of the company to make ordinary brick, fire brick, vitrified brick for street paving and pressed brick for exterior finishings on buildings.

NEARLY $500 PER ALARM!

A writer in Munsey's Scrap-Book states upon authority that there have been 14,597 fire alarms in the city of New York during the last twelve-month. Ten per cent of those were false alarms. Each alarm sent in costs $481.17 and the total cost of maintenance of the Fire Department was $7,000,000. The alarms will average 50 a day and the average loss per fire is $540, while the total loss to the city was $7,250,000 and at each fire an average of 10,000 gallons of water is used. Further, it is stated that fully one-third of those fires are the result of gross carelessness.

All this gives added force to the suggestion made by the International Society of Building Inspectors that the European law of "neighborhood liability" be enacted in this country too. That means that the person upon whose premises fire originates, a fire caused by neglect or carelessness on the owner's or the agent's part, is held liable at law for the damages done to other people's property by the spread of that fire beyond his own premises. In Europe this works to a charm in making people exceedingly careful in handling ashes, waste paper, etc. Our insurance companies could also aid materially in reducing our fire waste by making their policies read that they would be liable for only 50 per cent of the damage done by fire caused directly by carelessness and neglect. It is always easy to trace up the causes of fires and these regulations would do wonders to lessen the number. In Europe they have not one-sixth of the fire losses that we suffer and largely because of these wise regulations that induce care and watchfulness. It would not be anything of a hardship either, if our cities would be sensible enough to legislate that nothing but thoroughly fireproof buildings should be erected hereafter.

SOLICIT FUNDS FOR BIG CLAY PLANT

The committee which is soliciting funds with which to purchase the site for the factory of the Lehigh, Iowa, Clay Products Company to be erected in Webster City in the spring, is now at work. They will have not the slightest difficulty in getting the $6,000 necessary.

The money is given upon condition that the plant is to cost not less than $150,000, will employ not less than sixty men from the start, shall be completed by January 1, 1910, the subscriptions not to be payable until the plant is in operation.

The plant is to be of steel and brick, making it fire proof. It will be one of the finest clay plants to be found in the United States and the general offices of the plant here, also the one at Lehigh are to be located in Webster City. It seems likely that the company later will erect in this city a pressed brick plant. It is absolutely the biggest and best thing that ever came to Webster City, and is a concern which means more in the development of the clay than can at present be conceived. There will be from 20 to 24 kilns in the plant, a dry shed 90x400 and three or four stories in height, a clay shed 80x200 feet and two presses with a capacity of ten to twelve cars of finished ware per day.

SAND OR LIME BRICK OR BLOCK NEWS

Donaker & Hammen, of Jolley, Iowa, have purchased machinery for a cement drain tile factory.

The old Ottawa (Minn.) Brick Works is to be transformed into a factory to manufacture concrete brick and tile.

The Florence (Neb.) Brick Company will capitalize for $5,000 capital stock and will make cement blocks during 1909.

The Hollow Brick and Concrete Construction Co., Newburgh, N. Y., is in the hands of a receiver. Wm. H. Hilton is the receiver.

Archie Hillyard has purchased three acres of land adjoining the Lytle Manufacturing Company's factory and will make cement tile.

The Excelsior Granite Brick Co., Michigan City, Ind., has made a test of their machinery and found same satisfactory. Caspar Schmidt is the general manager.

The Hercules Co., Rochester, N. Y., is to manufacture brick, tiles, etc. Capital stock, $20,000. Incorporators are Charles J. McElroy, M. F. McElroy and R. M. Van Grafieldand.

The Wisconsin Composite Brick Co. has been organized at Milwaukee, Wis. The directors are Frank E. Buestrin, Henry Smith, Dr. B. F. Baker, Lawrence Elkus, W. R. Greenlaw and E. A. Coulter.

The Interstate Cement Tile Manufacturing Association has decided to have its annual convention in Minneapolis, Minn., March 2, 3 and 4, in conjunction with the Northwest Cement Products Association.

The Fremont (Neb.) Granite Brick Co., which is capitalized at $30,000, will engage in the manufacture of pressed facing brick. The plant was removed from Hastings. A. M. Baugh is the superintendent. The buildings are now being erected.

URGE BRICK MAKING IN PENAL INSTITUTIONS

Harrisburg, Jan. 12—The report of Francis J. Torrance, president of the Pennsylvania Board of Public Charities for the years 1907 and 1908, to be submitted to the legislature next month, which was made public, says that the overcrowded condition of many of the jails calls for serious consideration, the lack of employment especially being a problem that demands solution. The board suggests the building of workhouses in various parts of the state and further suggests that the prisoners be used in the building of roads. The report says:

"Experiments made on an extensive scale have established the fact that brick roads are as good as any other now in use. It is to be noted that brick clay is abundant in nearly every county in the state, and we would suggest that brick making for road purposes might profitably employ many of the prisoners in the workhouses proposed.

"All penal and detentional institutions, asylums and similar resorts under the direct control of the state, should be located in the suburban districts and we especially urge that the two penitentiaries of the state, located in the crowded districts of Philadelphia and Pittsburg, be removed to the country."

MISCELLANEOUS ITEMS

There is a talk of a $100,000 brick plant being erected at Rockford, Iowa.

The Richmond (S. C.) Brick Co. has been incorporated with $5,000 capital stock.

Cohagan & Co., Murdock Bldg., Washington, Pa., is in the market for machinery to make fire brick.

The Scanlon Brick Co., of Cohoes, N. Y., certified to a change of name to the Aetna Brick Company.

The Denton (Texas) Pressed Brick Co. will rebuild the plant which was burned some weeks ago, causing a loss of $10,000.

F. A. Parker of Spencer, Iowa, has bought the Sioux Rapids Brick & Tile plant from M. P. Typper, and will operate same.

S. R. Hurley, Grundy, Va., wants to buy a brick machine of from 10,000 to 15,000 daily capacity. A good second-hand machine will do.

The Pomona (N. C.) Terra Cotta Co. have increased their capital stock from $50,000 to $100,000, and will build a new plant with the increased capital.

Excavations were commenced two weeks ago for the new fire brick plant for the Harbison-Walker Refractories Co., which is to be built at Wylam near Ensley, Alabama.

The Mapleton (Kansas) Brick Works, which has been laying idle for some time, are to be put into operation again. It is said they will be operated full force by February 15th.

The large paving plant that is to be erected north of Murphysboro, Ill., by the Murphysboro Paving Brick Co., is now under construction. The plant will be completed by April.

E. O. Fitz has purchased the old Ft. Dodge (Iowa) Clay Works from J. W. Amond, who has owned it for the last year. The plant has not been in operation for more than a year.

The Ridgeville (Ind.) Tile & Brick Co. has been incorporated with $15,000 capital stock. The stockholders are T. A. Almonrode, C. L. Hollowill, C. Almonrode and W. T. McCurdy.

John Binhuff, of Muscatine, Ia., has been for the past seven months at Deep River, Ia., where a $20,000 brick and tile plant has been erected. He has contracted to operate the plant this season.

Overfield & Vroman, Mill Shoals, Ill., have their new plant in operation, fully equipped with Brewer & Co. machinery. They make stiff mud common brick and tile from black clay. Their first kiln of tile were water smoked and burned in fifty hours.

The Royal Brick Co., Connellsville, Pa., has just received its charter with $75,000 capital stock. The directors are C. O. LaClair, of Uniontown; F. M. Richey, Jr., and J. M. Miller, Pennsville; E. L. Sherrick, E. P. Richey and Geo. W. Hatfield, of Connellsville.

The Pomona (N. C.) Terra Cotta Co. are now building a modern two-press sewer pipe plant near their present plant. The plant will be equipped with Taplin, Rice & Clerkin Co.'s machinery, the contract being let so the plant will be in operation by June 1st, this year.

Archie Killyard, of Spencer, Iowa, has decided to build a $15,000 tile plant at Mitchell, S. D.

The Interstate Brick Co., Youngstown, Ohio, has been incorporated with $100,000 capital stock.

The Brunswick (Mo.) Brick & Tile Co. has increased its capital stock from $20,000 to $30,000.

The Vulcan Clay & Brick Co., Willsville, O., has increased its capital stock from $40,000 to $100,000.

S. W. Dubois & Son, Mt. Vernon, Iowa, have bought the brickyard of J. B. Robinson and will operate same.

The Keene (N. H.) Brick Company has been incorporated with $10,000 capital stock. They will operate the Appleton St. yard.

The Fort Scott (Kansas) Brick Co. is making arrangements to start the plant which was closed down on account of the bank failure of Mr. Homaday.

The Maunee Brick & Tile Co., Ft. Wayne, Ind., contemplate expending $10,000 on their plant, increasing it from 40,000 to 60,000 brick capacity. The Nickel Plate road will lay a spur to the track.

R. B. Ellis, of Blue Island, Ill., has been engaged as superintendent of the Manteno Brick Co.'s works. It is anticipated that the works will be started March 1st, as the company has orders ahead and excellent prospects.

The Mayo Brick & Tile Co., Walhalla, N. D., recently elected the following officers: H. G. Mayo, Walhalla; Judge W. J. Kneeshaw, Cavalier, and John L. Johnson and W. W. Reyleck of Grafton. They will make improvements and start an aggressive campaign for business.

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The Consolidated Tile Brick Mfg. Co., Rising Sun, O., has reduced its capital stock from $20,000 to $8,000.

The Huntsville (Ala.) Brick Co. are shut down making repairs that will require two months' time, so as to get ready for 1909 business.

The Union (Mo.) Brick Yards Co. will put in at once a large press press brick machine. The clay being tested makes good pressed brick.

The Swift Shale Brick Co., Denver, Colo., has been incorporated with $50,000 capital stock. Incorporators are John V., Henry V., and B. M. Swift.

John Halpin, of Momence, Ill., is now the superintendent of the new Tucson (Arizona) Press Brick Co. The company will begin operations in sixty days.

It is a rumor that the Peebles Paving Brick Co., Portsmouth, Ohio, is negotiating for the purchase of the Scioto Fire Brick Co.'s plant at Sciotoville, Ohio.

The Denny-Renton Clay & Coal Co., Seattle, Wash., have issued bonds to the amount of $500,000 to be used to make extensive improvements to its plants.

The Manteno (Ill.) Brick Co. have purchased more dryer cars, which will enable them to turn out over 200,000 brick in eight hours on their Chambers Bros.' Co. machine.

The Union Clay Products Co. has been incorporated at Jersey City, N. J., with $150,000 capital stock. Incorporators are H. O. Coughlan, B. S. Mantz and John R. Turner.

The Underhill Brick Works at Rockport, Ind., is considering the putting in of a dryer for the handling of their brick and tile. Clarence Underhill is now making investigations.

The capacity of the plant of the Detroit (Mich.) Vitrified Brick Co., at Corunna, will be increased from 20,000 to 50,000 brick daily. The company has had a very successful season.

A brick plant to employ 125 hands is to be built at Henryetta, Okla., where there are 15 coal mines paying out over $65,000 monthly in wages. Henryetta offers to furnish 3-cent gas to manufacturers.

The Clay Tile Co., under the management of Mr. Ten Brink, will establish a plant for the manufacture of clay tile in southwest Fremont, Neb. Three thousand dollars has been expended for machinery.

The Terre Haute (Ind.) Vitrified Brick Co. plans to expend $72,300 in improvements. A 100,000 capacity brick machine, more kilns and a steam shovel will be added. Preferred bonds to the amount of $75,000 are issued.

The Independent Brick Co., of Trenton, N. J., are shipping brick every day and have orders ahead for 15,000,000 brick for spring delivery. L. M. Codington has recently been elected treasurer. J. W. Miller is manager of sales.

The Paolo (Kansas) Brick & Tile Co. closed their plant for the season the first of the month after a business of double the last year. Some repairs will be made so as to greatly increase the capacity. Dr. A. Reichard is the prime mover in the company.

The Scandia-German Portland Cement Co. have contracted to erect a Portland cement plant five miles south of Bartlesville, Okla., that will make 1,200 barrels daily and will cost $625,000. The Gainer Eng. Co., of Kansas City, Mo., have the construction contract.

The Benton (Ark.) Brick Co. will add machinery for the manufacture of drain tile to their plant.

The machinery is all in place for the new brick plant of the Girard (Kansas) Brick & Tile Co.

Several Eastern parties who have had experience in the clay business, will establish a brick factory at Roseburk, Oregon.

The St. Louis (Mo.) Clay Products Co. has been incorporated by William A. Crowell, P. L. Vorhees and C. L. Moder. Capital stock, $25,000.

The Illinois Brick Co. is constructing a most modern brick plant at Shermerville on the C. M. & St. Paul road. The capacity will be 65,000,000 brick annually.

The Adamant Brick Co., of Denver, Colo., is constructing a Haigh Continuous Kiln at Boulder, where they acquired the shale brick plant. Wm. T. Dumbleton is manager.

The Central Brick & Tile Co., Kalo, Ia., has commenced digging a tunnel about 400 feet long underneath the M. & St. L. tracks, so as to get to their clay beds without crossing the tracks.

The Brooklyn (N. Y.) Vitrified Tile Works has been incorporated with $20,000 capital stock. Incorporators are Wm. Chell, 35 Second St., Brooklyn; Edward G. Meridian, Middleton, N. J.; Oscar J. Zilly, Long Branch, N. J.

The Richlands (Va.) Brick Corporation has been incorporated with $25,000 capital stock. C. C. Hyatt is president and treasurer and H. E. Hyatt secretary, both of Norton, Va. G. C. Perry, of Wise, Va., is vice-president.

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One splendid well equipped small brick plant. Good location; brick sells at $10 per thousand. Good small residence on property. Have contracted to make 300,000 Everything first class; wish to sell soon on account of other business. This plant can be bought very cheap and on good terms.

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220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

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Save 25 per cent on your repair bills by having me make drawings of your machinery repair parts. Charges $8.00 per day.

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Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2½ in. to 1½
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One Blake 6 in. to 6 in.
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Two Cameron 3 in. to 4 in

Three Centrifugal pumps 4½ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in. Buffulo Force Fans. One Stutervant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill One No, 2 and No 3 Mead Mill. Four 32 in. and one 42 in. Munson Mills.

The above machinery has been used only a short time.

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Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

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Wanted, a 50,000 capacity pug mill. Address

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75 Tripple Deck Drain Tile Wooden Dryer Cars, roller bearings, 31 inch track gauge, all in good running order, now in daily use. Will hold 200 4 inch tile and 30 12 inch tile.

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One 3-Mold Boyd Dry Press.
One 3-Mold Andrus Dry Press.
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One Freese Stiff Mud Machine—A special.
One Standard Board Delivery Cutting Table.
One Freese 8-foot Pug Mill.
One "Centennial" Stiff Mud Brick Machine.
One Fernholtz 42-inch Pulverizer.
One 6-foot Iron Frame Mixer.
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Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

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Will sell or lease land near Cincinnati having suitable clay on it for manufacturing Fire Brick etc.

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5000 brick Pallets 10½ by 32 inches, kiln shutters and grate bars. Address

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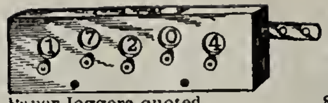

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Southern Iowa Brick and Tile Factory doing good business. Six room house for Manager. Plenty of dirt. On two railroads. A splendid opportunity for some one.

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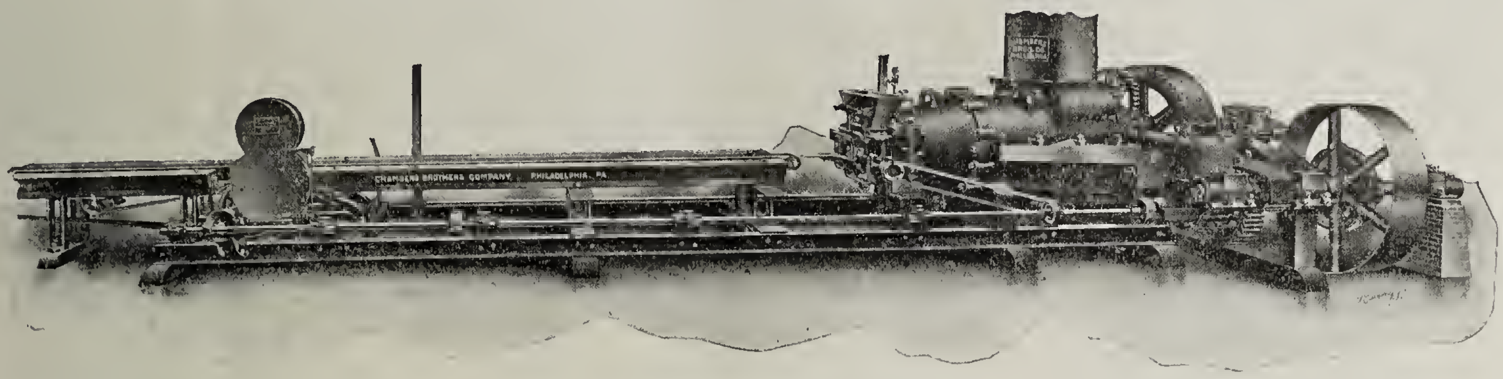
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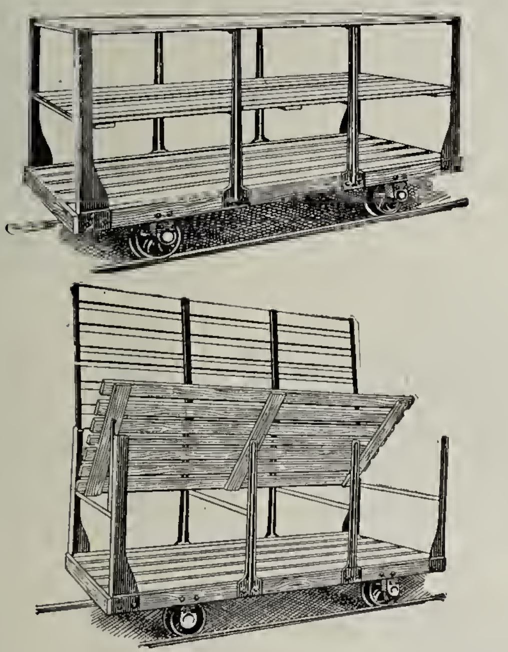

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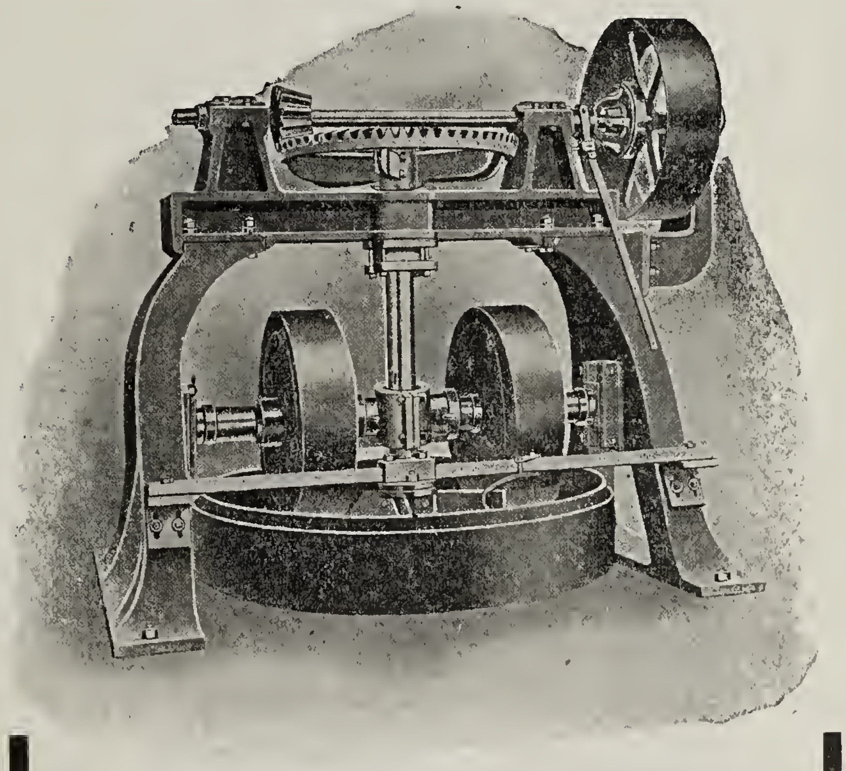

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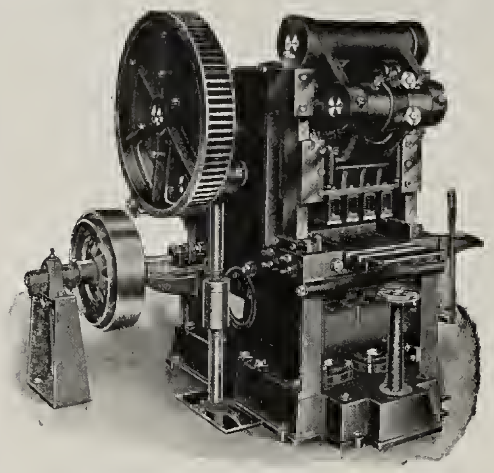
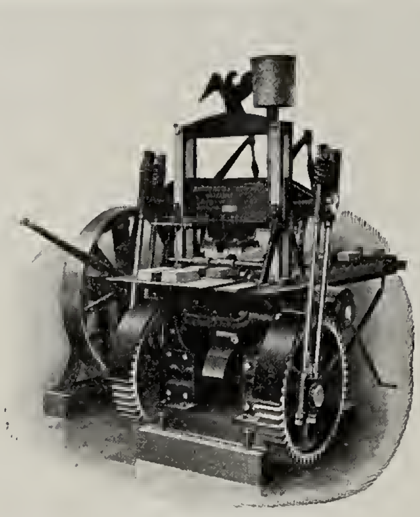
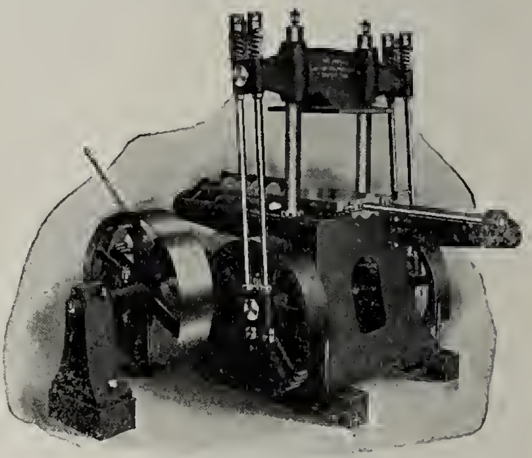
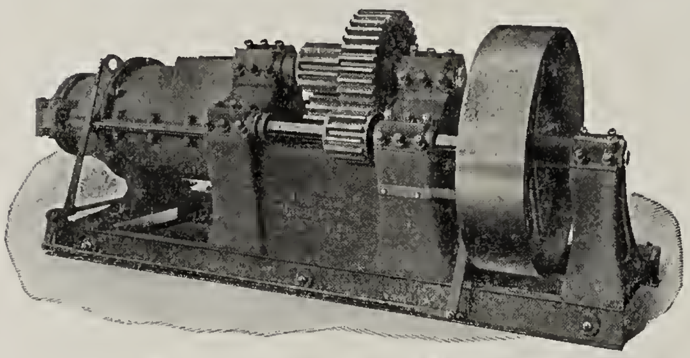
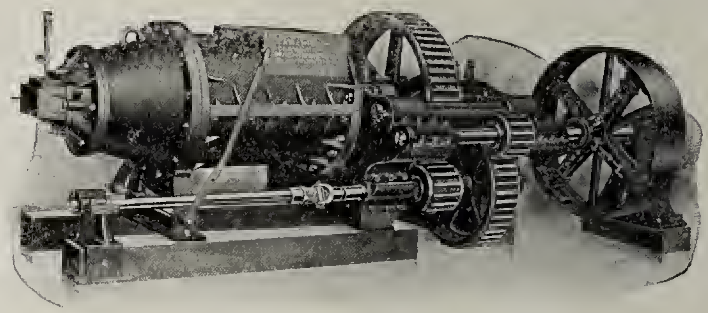

Model "B" Dry Press


Eagle Repress


Roofing Tile Press


No. 65 Auger Brick Machine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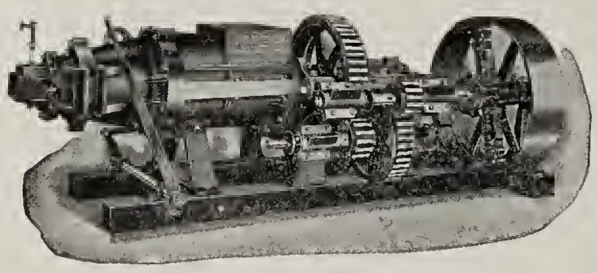
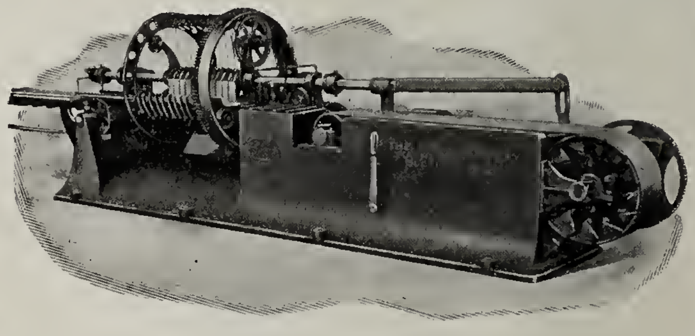
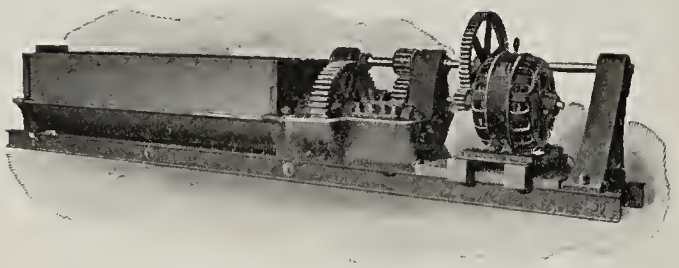
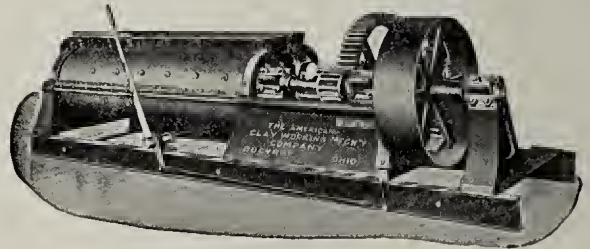

No. 2 Giant Brick Machine


No. 83 Automatic Cutter


No. 51 Electrical Driven Pug Mill


No. 38 Double Shaft Pug Mill

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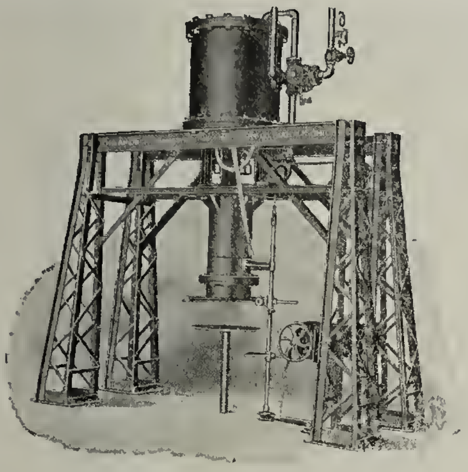
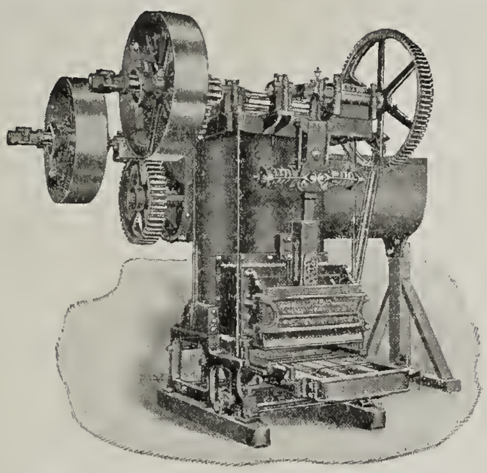
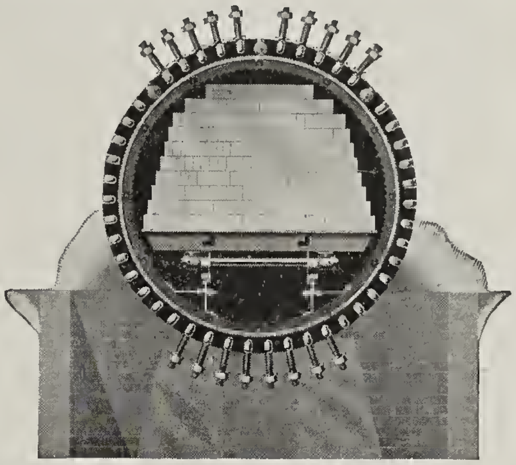


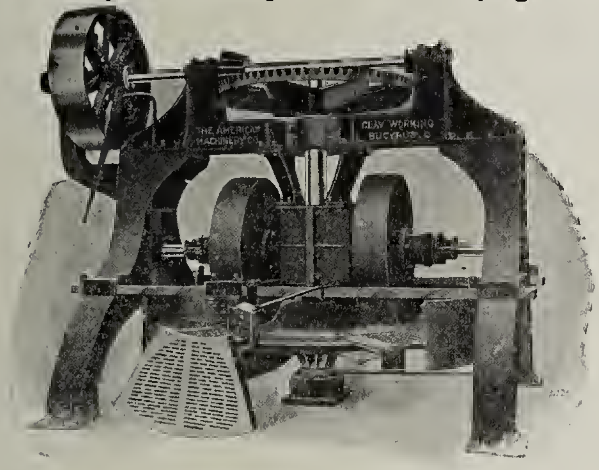
Sewer Pipe Machinery



Upright Stock Brick Machine

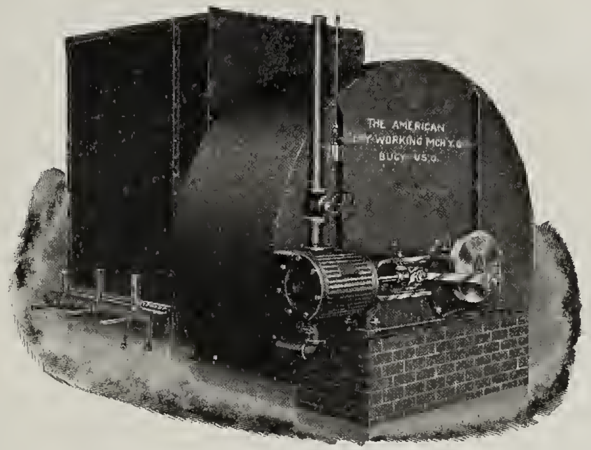


Sand-Lime Brick Machinery



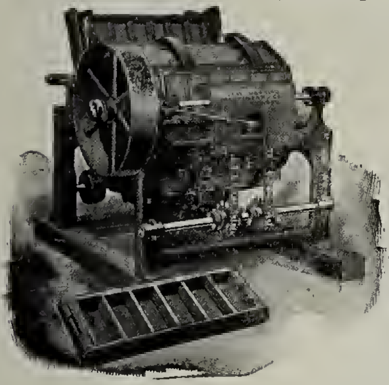
THE AMERICAN CLAY WORKING MACHINERY CO. BUCYRUS, O.

9 Foot Dry Pan

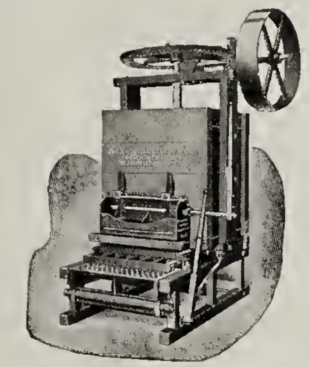


THE AMERICAN CLAY WORKING MCH'Y CO. BUCYRUS, O.

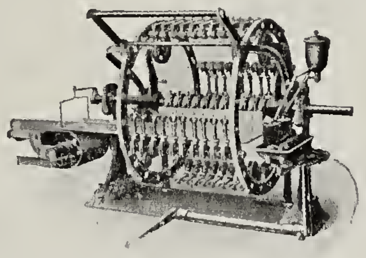
Blower Dryer Apparatus



Mold Sander



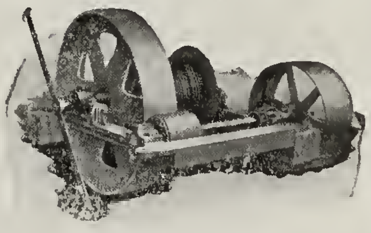
H. P. Brick Machine



No. 62 Hand Power Cutter

Dry Cars

Disintegrators



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CALDWELL STEEL TOWER

is safe, staunch and durable and will carry four times the weight of the filled tank. Expensive labor is not necessary to erect these outfits, your own men can do it. We furnish all plans.

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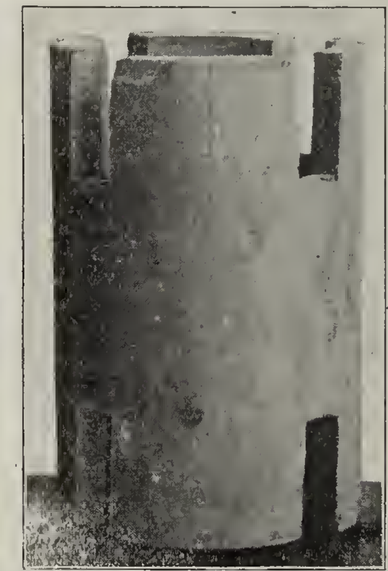

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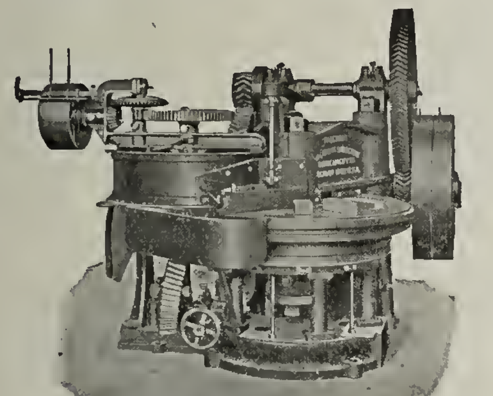

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Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

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MANUFACTURERS OF BRICK
SHIPPING POINT, LADY SMITH, VA.

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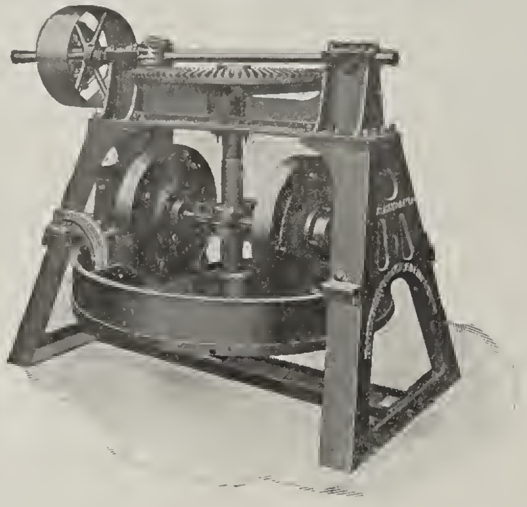

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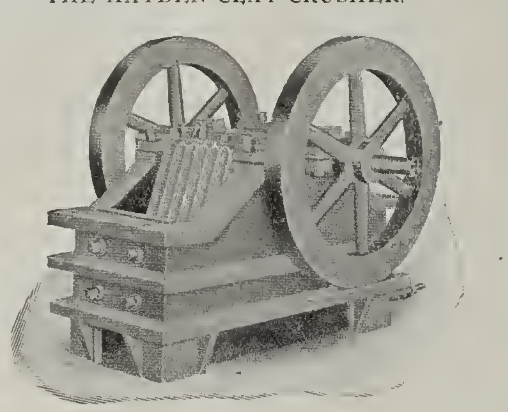

This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

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BRICK TESTING RATTLER

For testing paving brick.

Built to the standard specifications of the N. B. M. A.

Best material and workmanship.

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MILWAUKEE, WIS.
They Never Fade

Twenty long years of time and weather have tried out Ricketson's famous "Red Brick" Brand

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for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

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MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.

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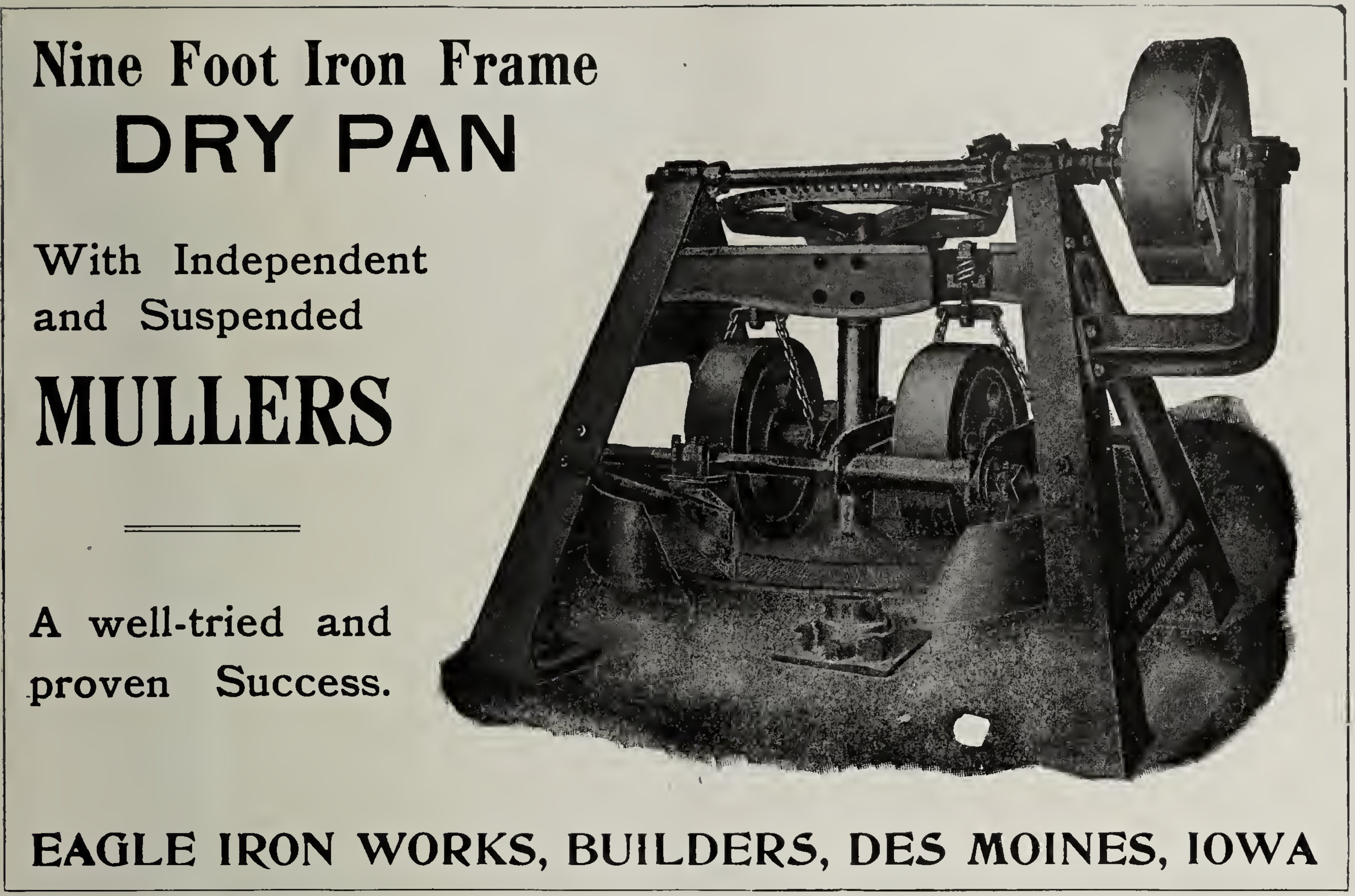
BRICK AND MORTAR

COLORING



Nine Foot Iron Frame DRY PAN

With Independent
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MULLERS

A well-tried and
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EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets

Built Right,

Price Right,

Write Us

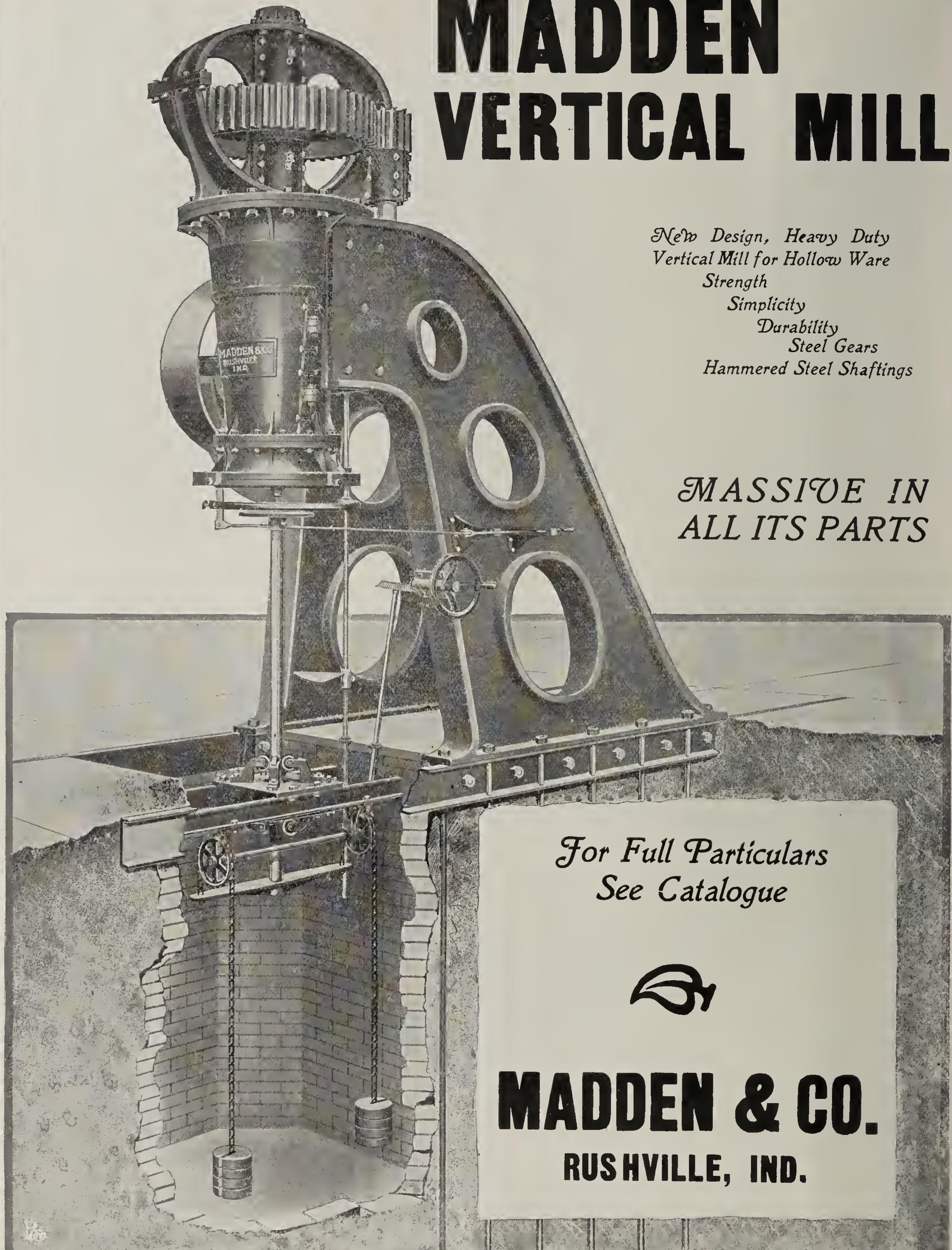
STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.
NILES, OHIO



MADDEN
VERTICAL MILL

New Design, Heavy Duty
Vertical Mill for Hollow Ware
Strength
Simplicity
Durability
Steel Gears
Hammered Steel Shaftings

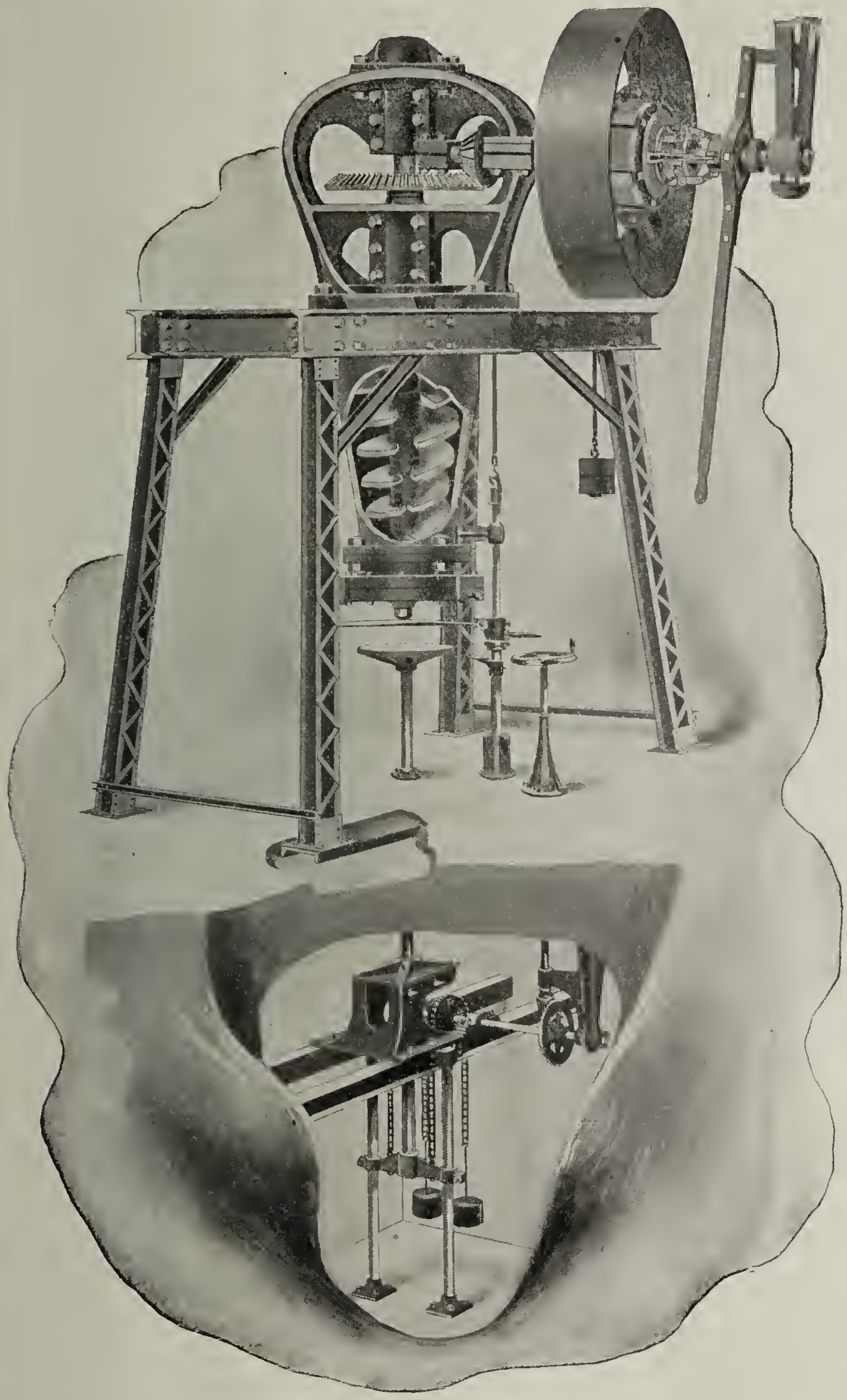
MASSIVE IN
ALL ITS PARTS

For Full Particulars
See Catalogue

MADDEN & CO.
RUSHVILLE, IND.

MADDEN VERTICAL MILL **WITH STEEL FRAME**

(*Type "F"*)



Adapted for the manufacture of all clay products that can be made on an auger machine. Especially suited for large drain tile, hollow ware and fire proofing.

Makes tile up to 24 inches

Massive in Construction
combining
strength and durability

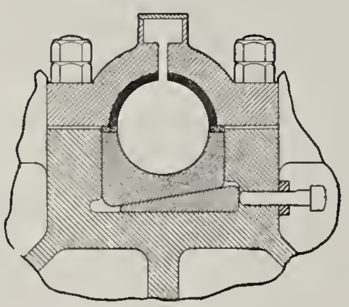
Easy to operate

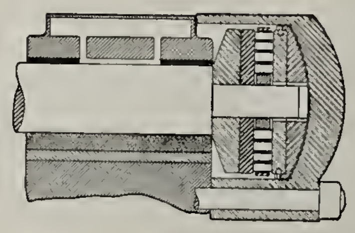
A
thoroughly tested type
having worked for
13 years
in stubborn clays

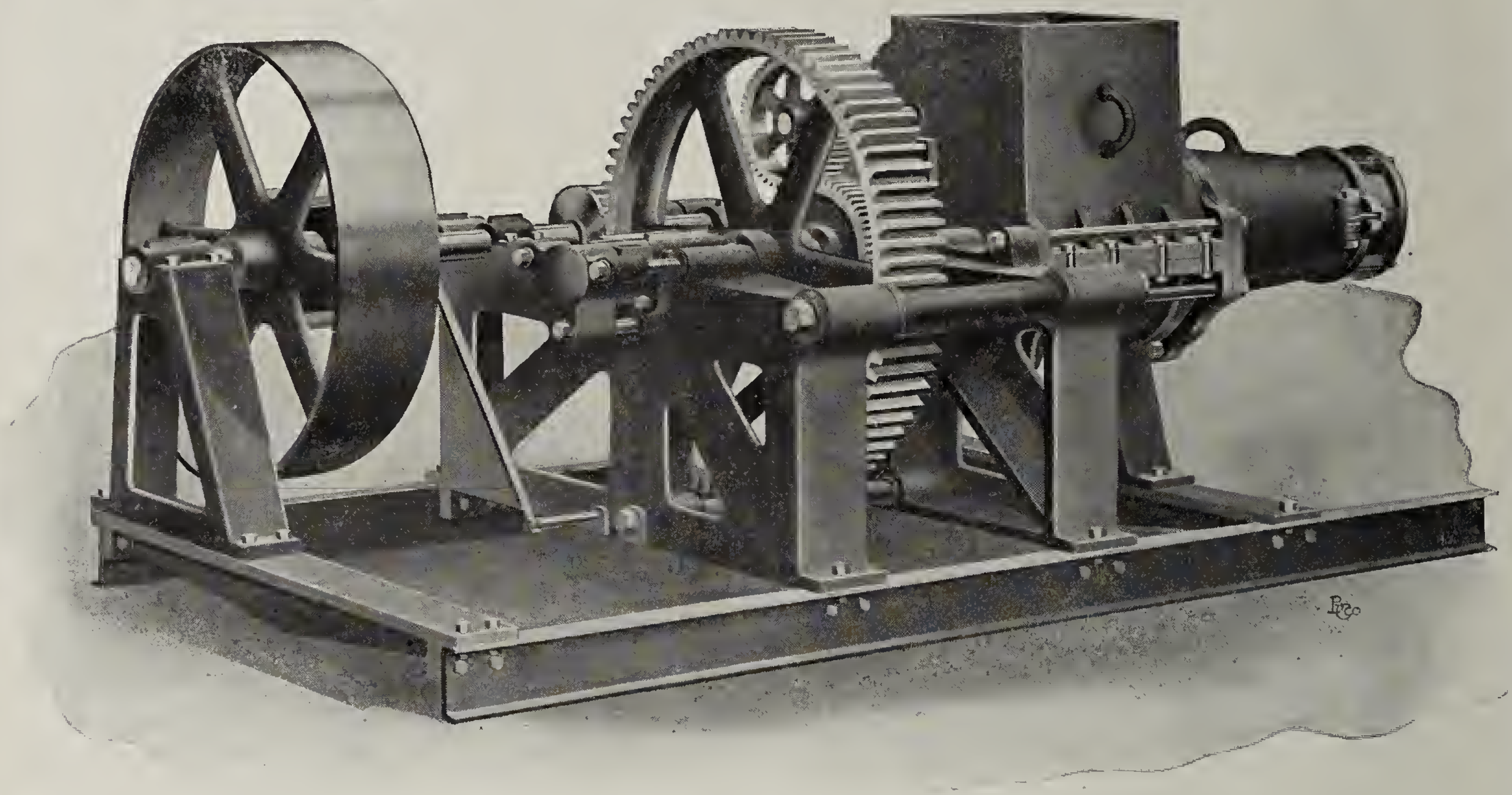
Can be furnished without iron frame if desired.
Full Particulars in Catalogue

MADDEN & COMPANY, RUSHVILLE, IND.

Madden Horizontal BRICK TILE Mill







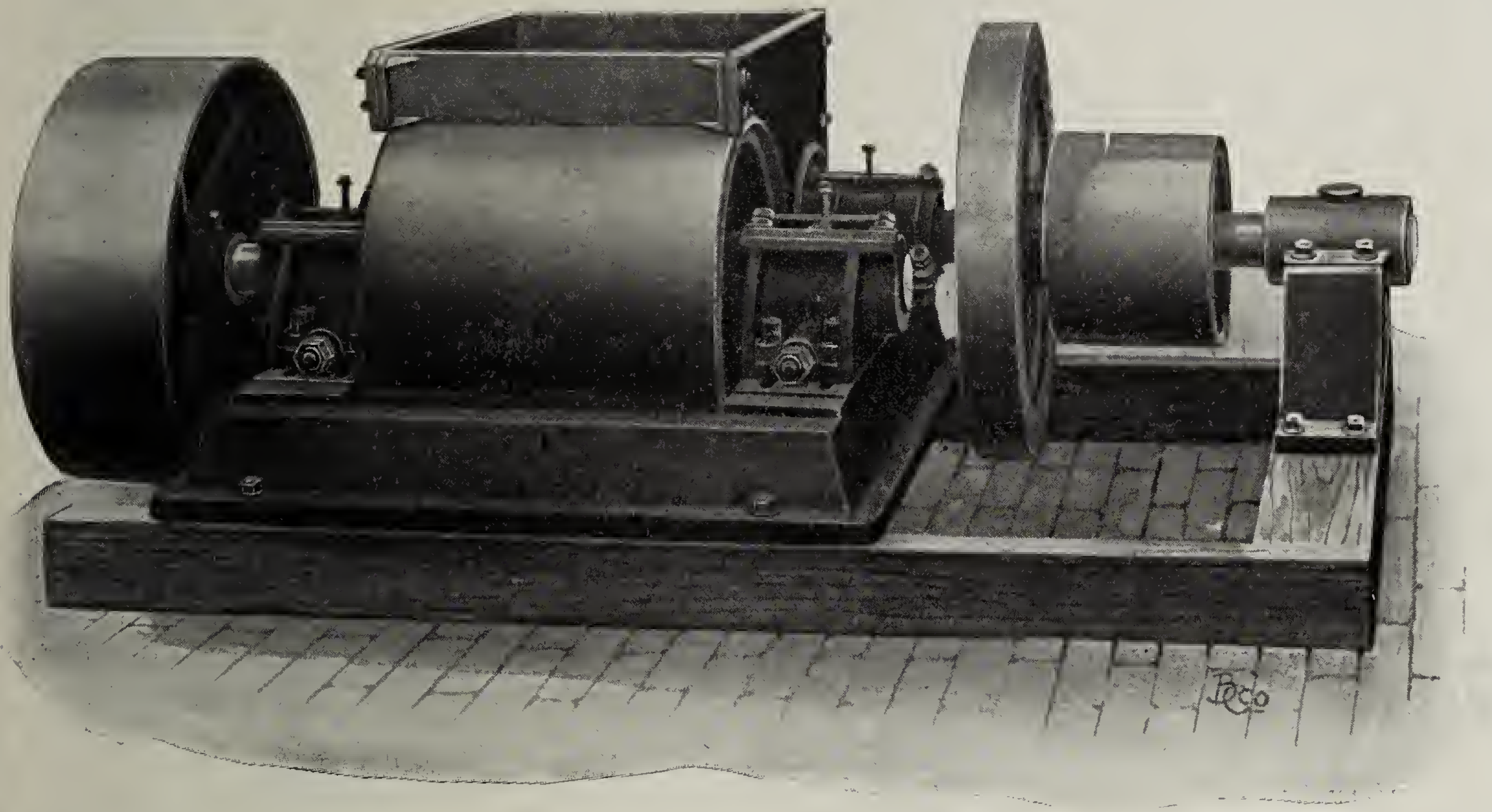
A Modern Version of a Good Old Type

Here is the Madden Horizontal Brick and Tile Mill in its 20th Century form, changed and improved to the minute. The auger shaft removoble bearings (see cross section) are an entirely new introduction, making it possible to keep shaft in perfect alignment without rebabbitting same. Bearings, caps, housings, etc., are all planed accurately to standard sizes. Breakage eliminated by safety appliances. Steel gears; roller bearings; no expense spared. Made in three sizes. *Write for catalogue.*

Madden & Co. — Rushville, Ind.

Madden Disintegrators

Rolls Chilled White Iron *Bearings Ring Oiling*
With or Without Springs



An Easy Leader in Disintegrators

FAST ROLL 14x24 *FEEDER ROLL 24x24* *SHAFTS 4-in. DIAMETER*

Our new No. 3 Heavy Duty Disintegrator will compare in massiveness and productive qualities with any machine on the market. Bed plate design embodies every feature calculated to insure the greatest strength. Bearings are divided at an angle of 45°, and are lined with genuine Copper-Hardened Babbitt and are of the Ring-Oiler connection. For full description see catalogue.

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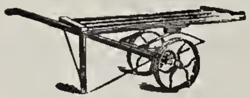
IS KNOWN THE WORLD OVER FOR

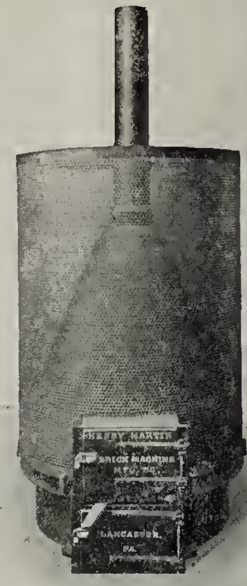
ITS SIMPLICITY, DURABILITY AND

COMPLETE SATISFACTION THROUGHOUT

DRYER CARS

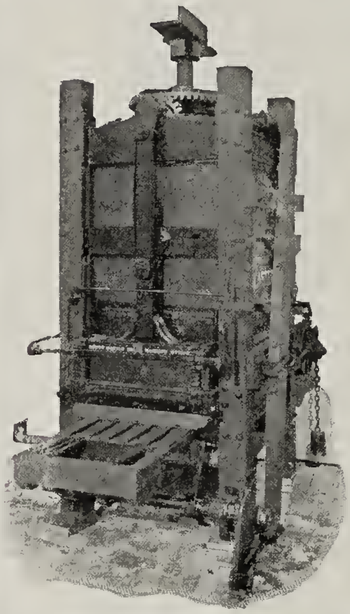


TRUCKS

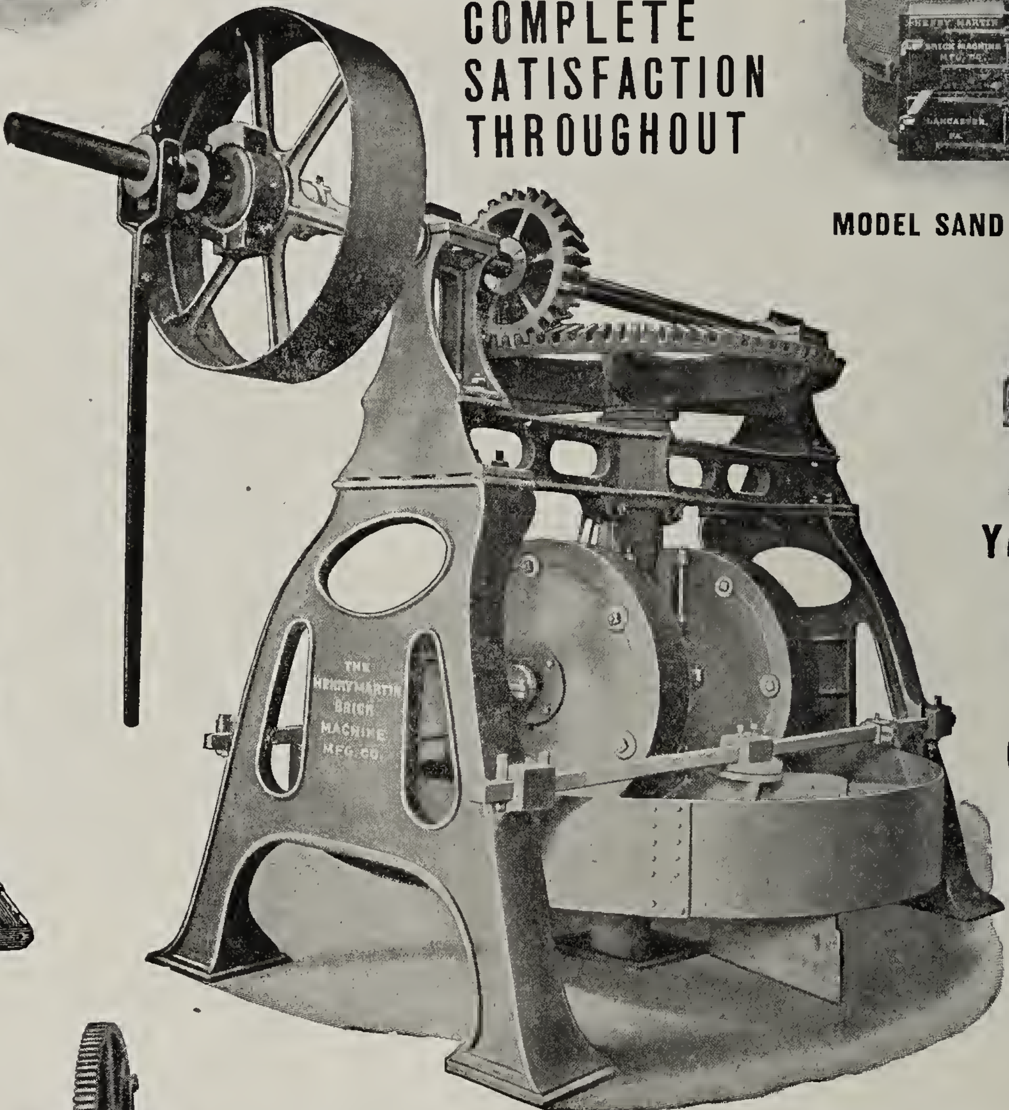


MODEL SAND DRYER

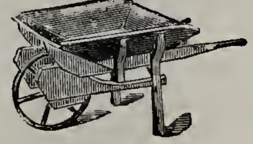
WE GUARANTEE OUR MACHINERY



HORSE POWER MACHINE



YARD SUPPLIES

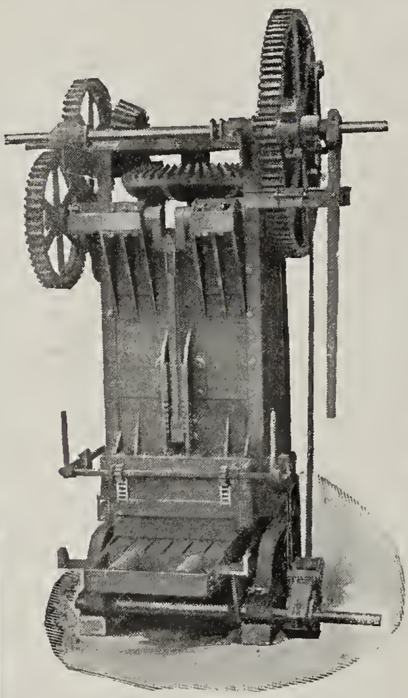


OF ALL KINDS BUILT RIGHT

TRUCKS

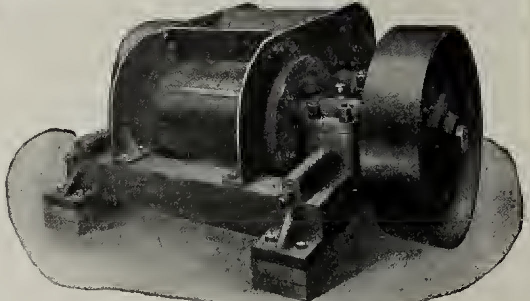
BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

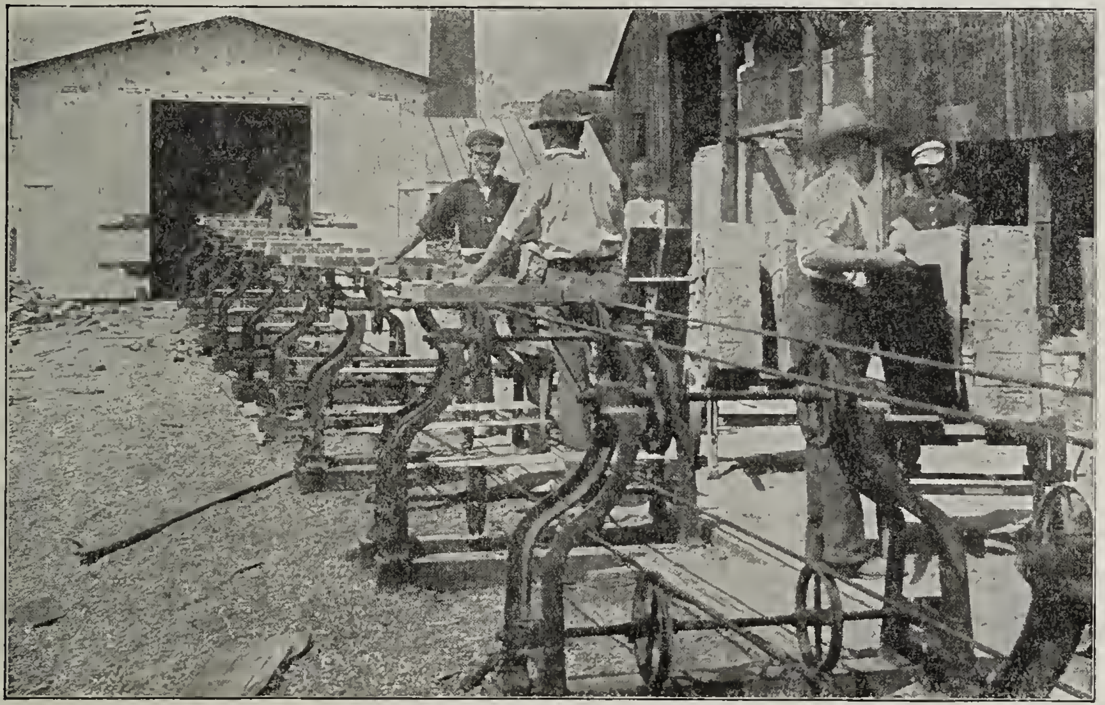
PATENTED

February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞



From "Martin Patent System" Brick Dryer to Kilns

☜ LABOR SAVING THROUGHOUT ☜

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

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HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 0 Shovel—Ohio Brick Co., Toledo, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

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Wire Cables used Instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

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LORAIN, OHIO

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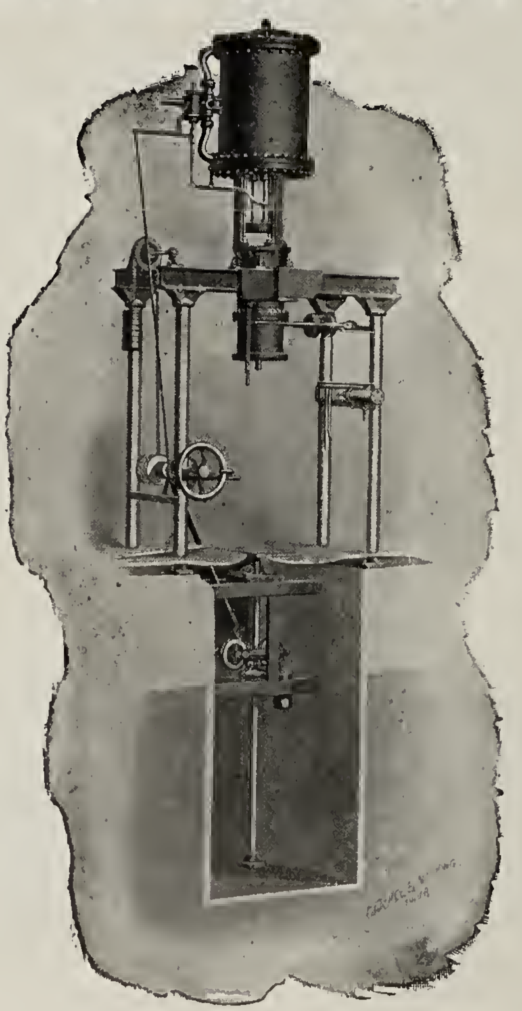


SEWER PIPE and DRAIN TILE MACHINERY

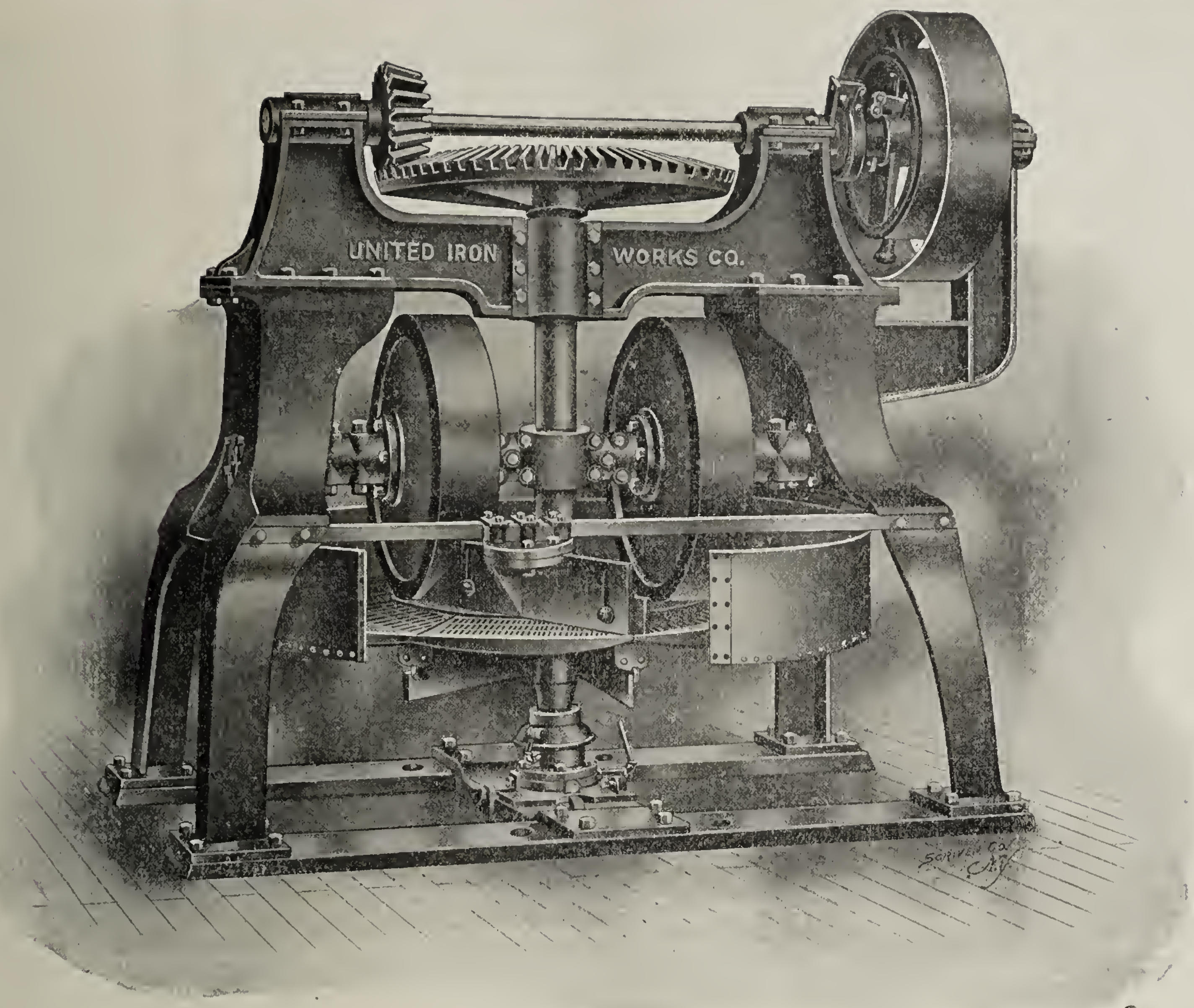
DRY AND WET PANS

Socket Dies, Ring Dies, Cluster Tile Dies

Write us for prices. State capacity wanted.

THE TURNER VAUGHN & TAYLOR CO.

CUYAHOGA FALLS, OHIO, U. S. A.



Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,
WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

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CHERRYVALE, KAS.; KANSAS CITY, MO.

No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

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Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

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Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
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NO. 277
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The Atlas Car and Mfg. Co.
CLEVELAND, OHIO

VOL. 34 NO. 2

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
— TO THE —
CLAY ·
· INDUSTRY ·

January 30, 1909

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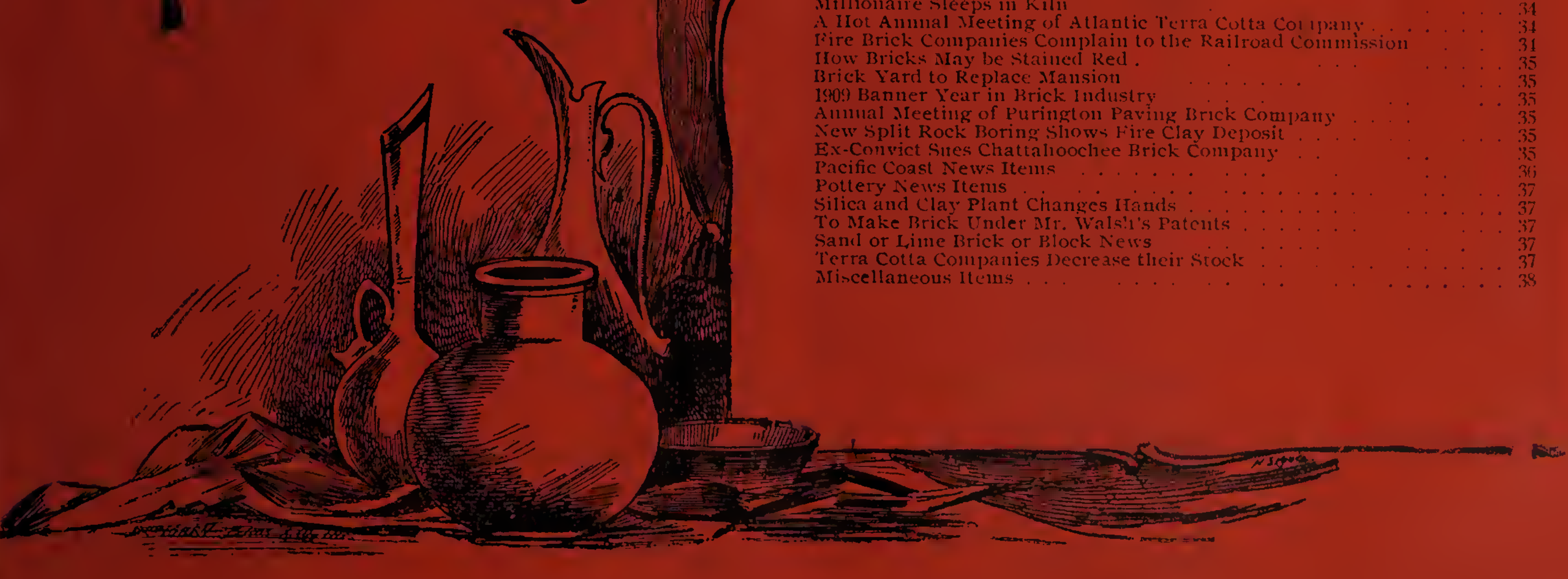

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The C.W. Raymond Co.
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The introduction of Raymond Machinery marks the beginning of the present era of improvement and perfection in clay working methods, and their leadership has been most prominent in their persistent adherence to proven principles as well as marketing new machinery.

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"Dry and Why"

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2046—Conveyors.
2047—Four Roll Combination Crusher.
2049—Niagara Hollow Ware Machine.
2052—Victor Repress.
2053—Bevel Geared Pug Mills and Clay Granulators.
2056—Portable Track.
2060—Roofing Tile Designs.
2061—Dry Press Machinery.

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2078—Soft Mud Machinery.
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2084—Dryer Cars.
2085—Hand Dry Press.

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2087—"777" Brick Machine.
2088—Hoisting Apparatus.
2089—No. 2 Combination Brick Machine.
2090—No. 2 Daytonian Brick Machines.
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2096—"555" Brick Machine.
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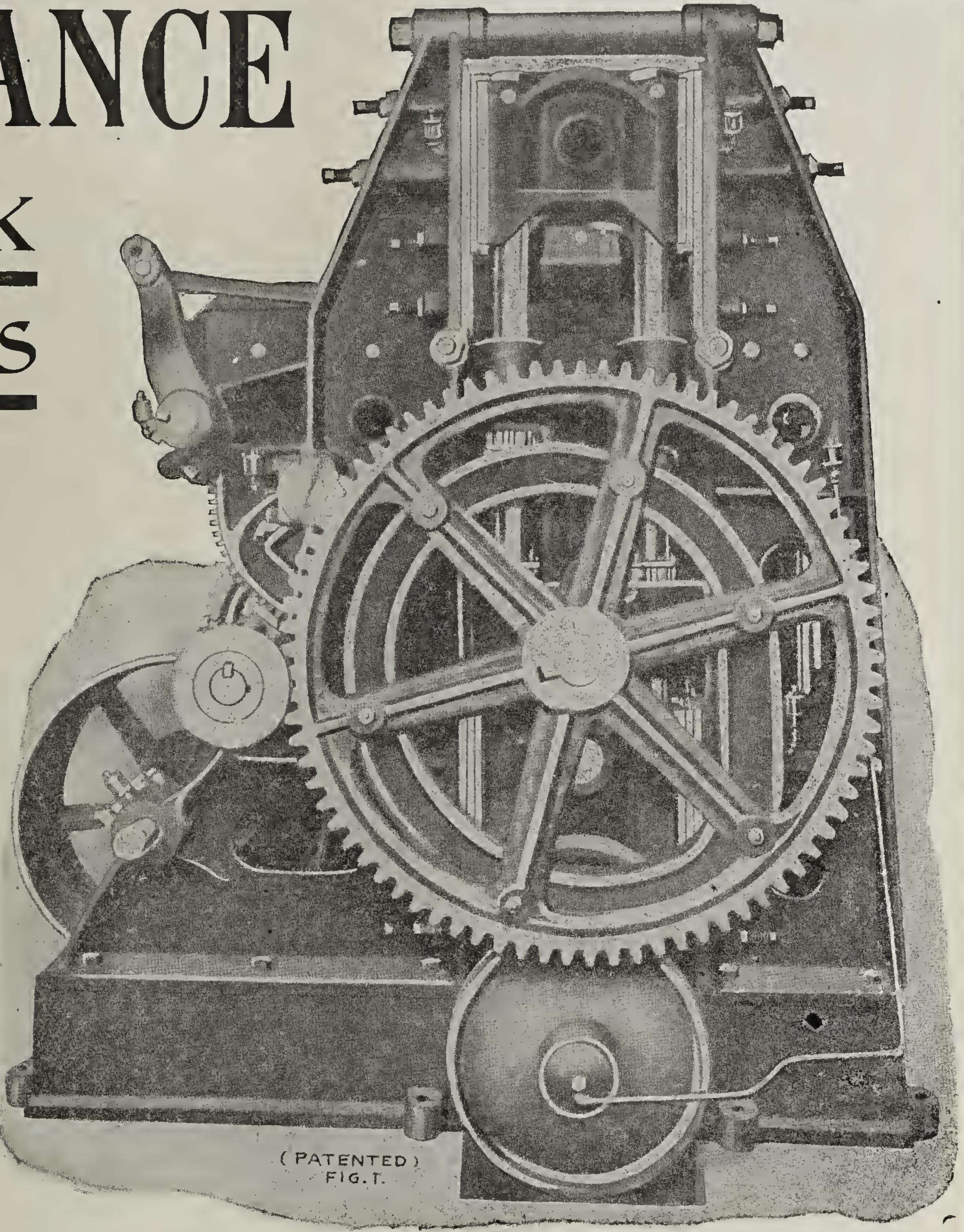
The C. W. Raymond Company

DAYTON, OHIO, U. S. A.

RELIANCE

BRICK

PRESS



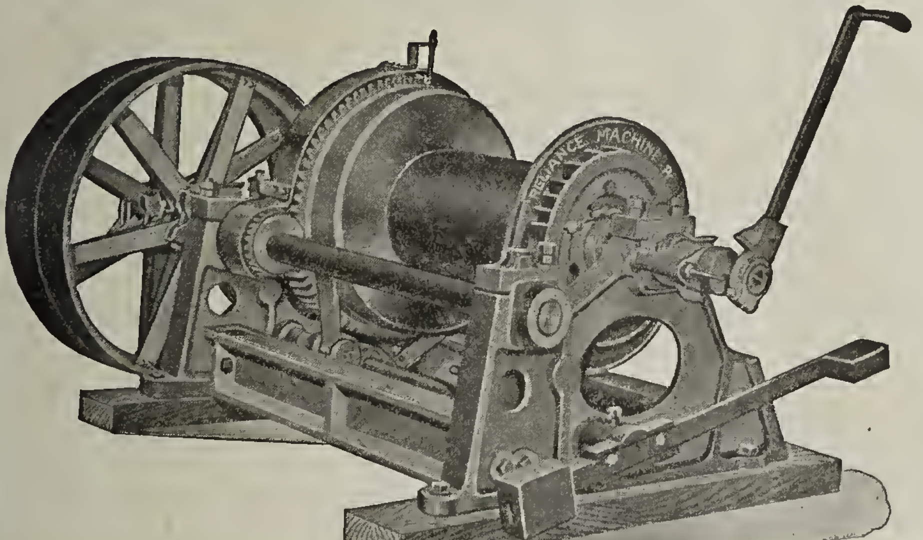
(PATENTED)
FIG. 1.

The Only
Machine Making
Brick Without
Granulated Centers

No Toggles
Powerful
Simple

We Design and Equip
Dry Press Brick
Plants Complete

Improved Reliance Friction Drum Hoist



STEAM OR BELT DRIVEN

Specially Adapted to
Service in Clay Plants

RELIANCE MACHINE and
TOOL WORKS, St. Louis, Mo.

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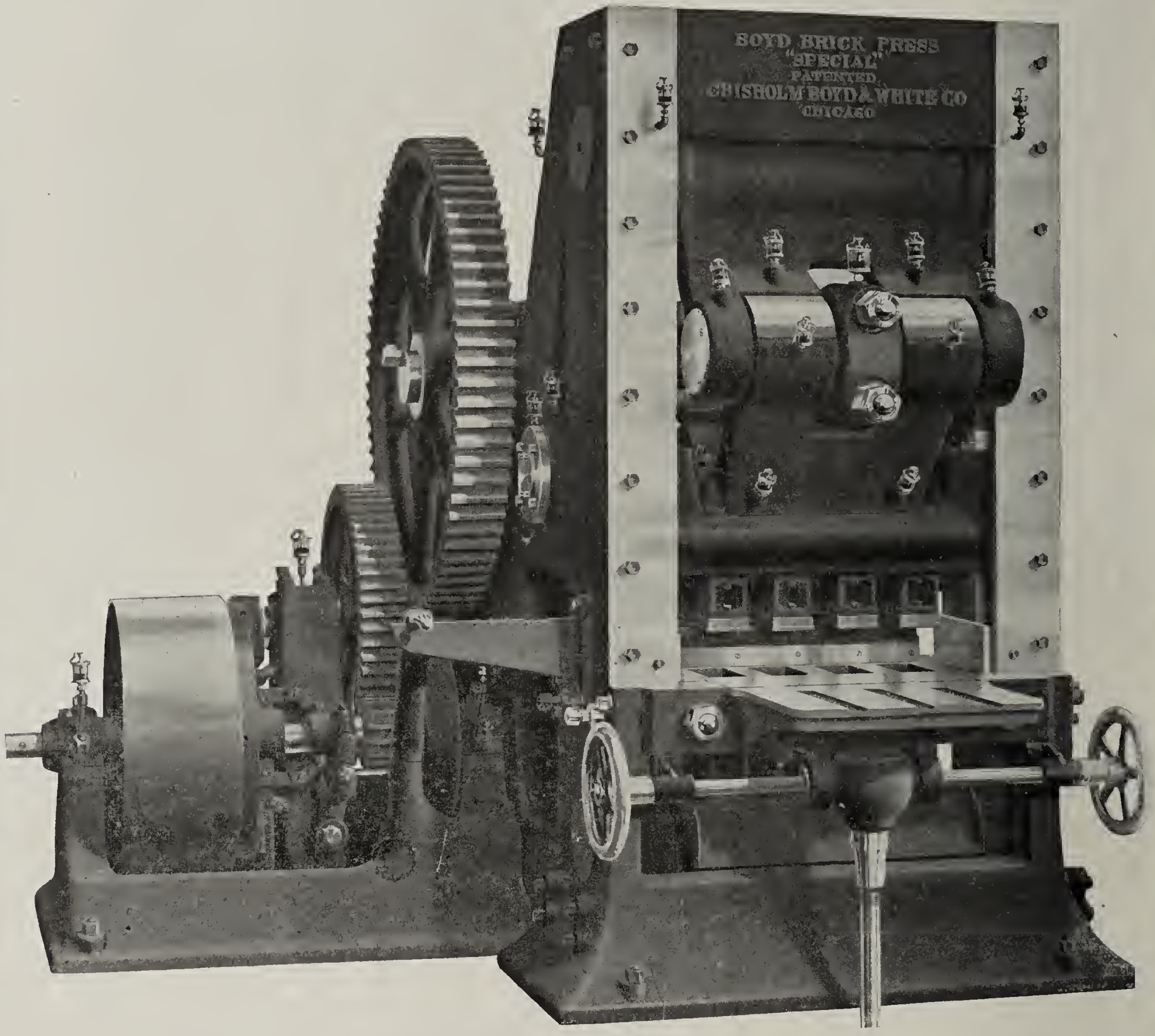
Built in Two, Four and Six-Mold Sizes



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BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

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Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

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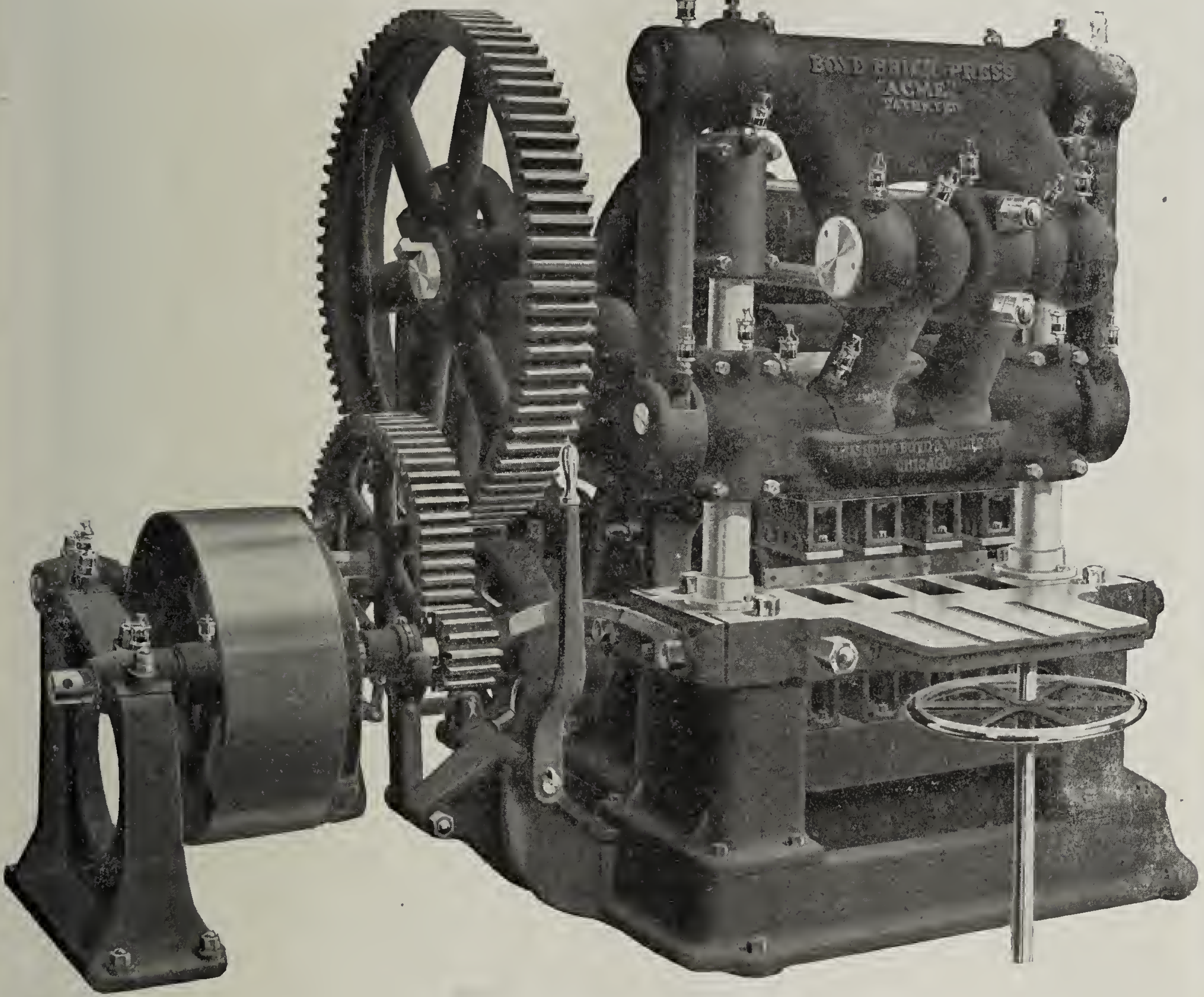

FOUR-MOLD "ACME"

Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

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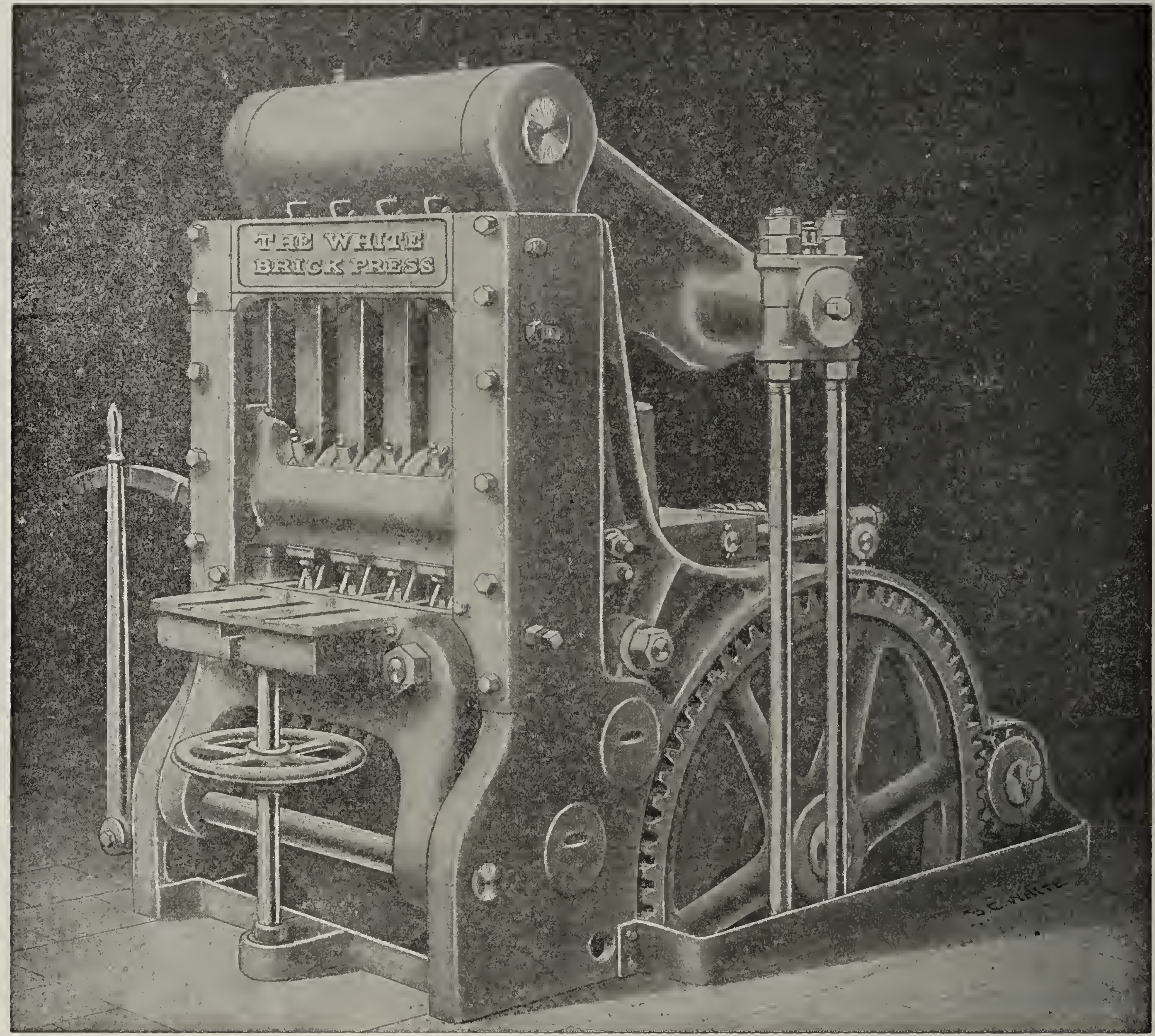
ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

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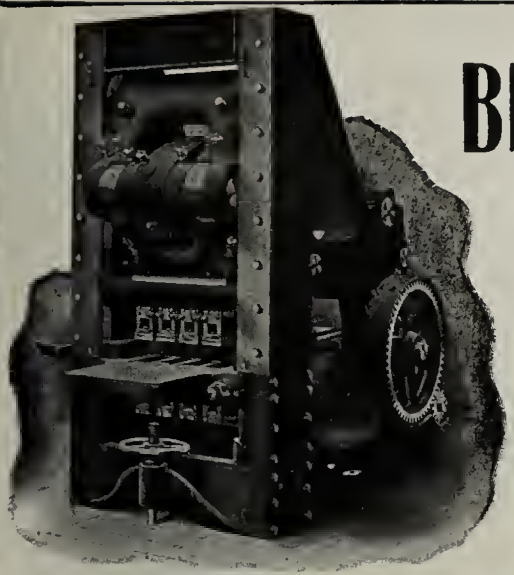
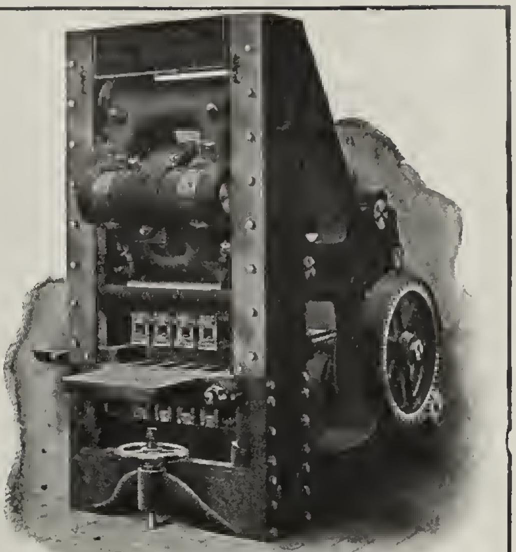
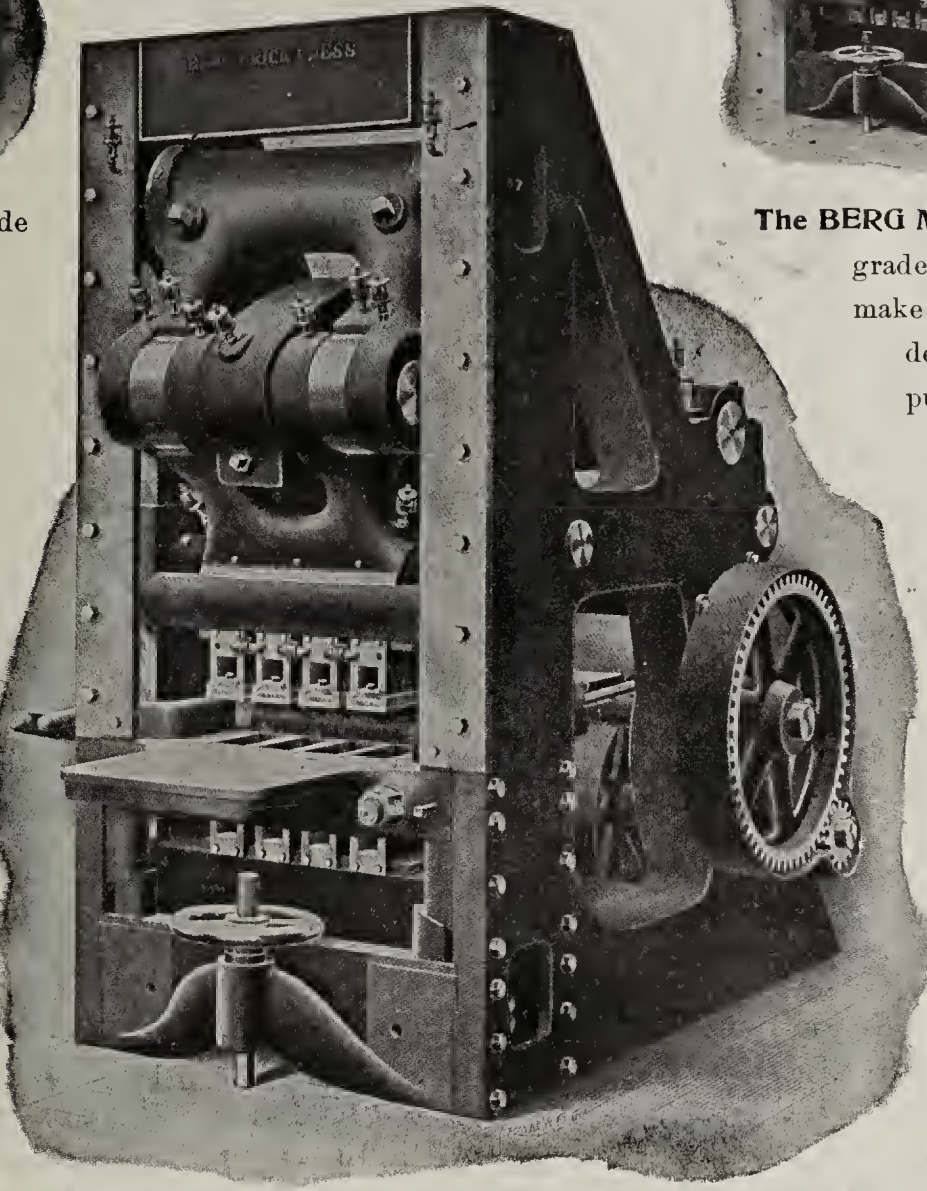
CHICAGO BRICK MACHINERY CO.
1308 GREAT NORTHERN BUILDING, CHICAGO



BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.





The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, exclusively. Plans and specifications on the different kinds of plants furnished, also all equipments.

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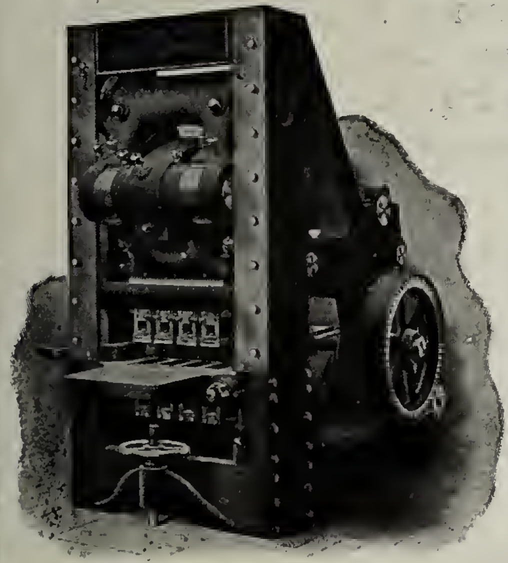
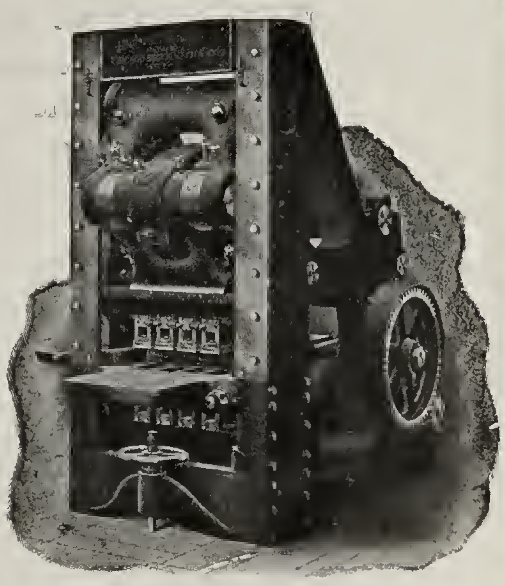


A. BERG & SONS
OFFICE: MANNING CHAMBERS
TORONTO, ONT., CANADA



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The secret of success in the brick business does not lie altogether in compiling and studying the daily report, but back of all this is the underlying secret of knowing each and every condition as it actually exists on the brick yard. We have in our employ practical brick men, who, while knowing the value of theory, can put on their jeans, go out on the yard and after spending the necessary time there, they can submit a complete report enumerating both good and bad features Very often our man can show short cuts in manufacture, and savings in cost which might mean the saving of hundreds and sometimes thousands of dollars.

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United States Engineering Co.

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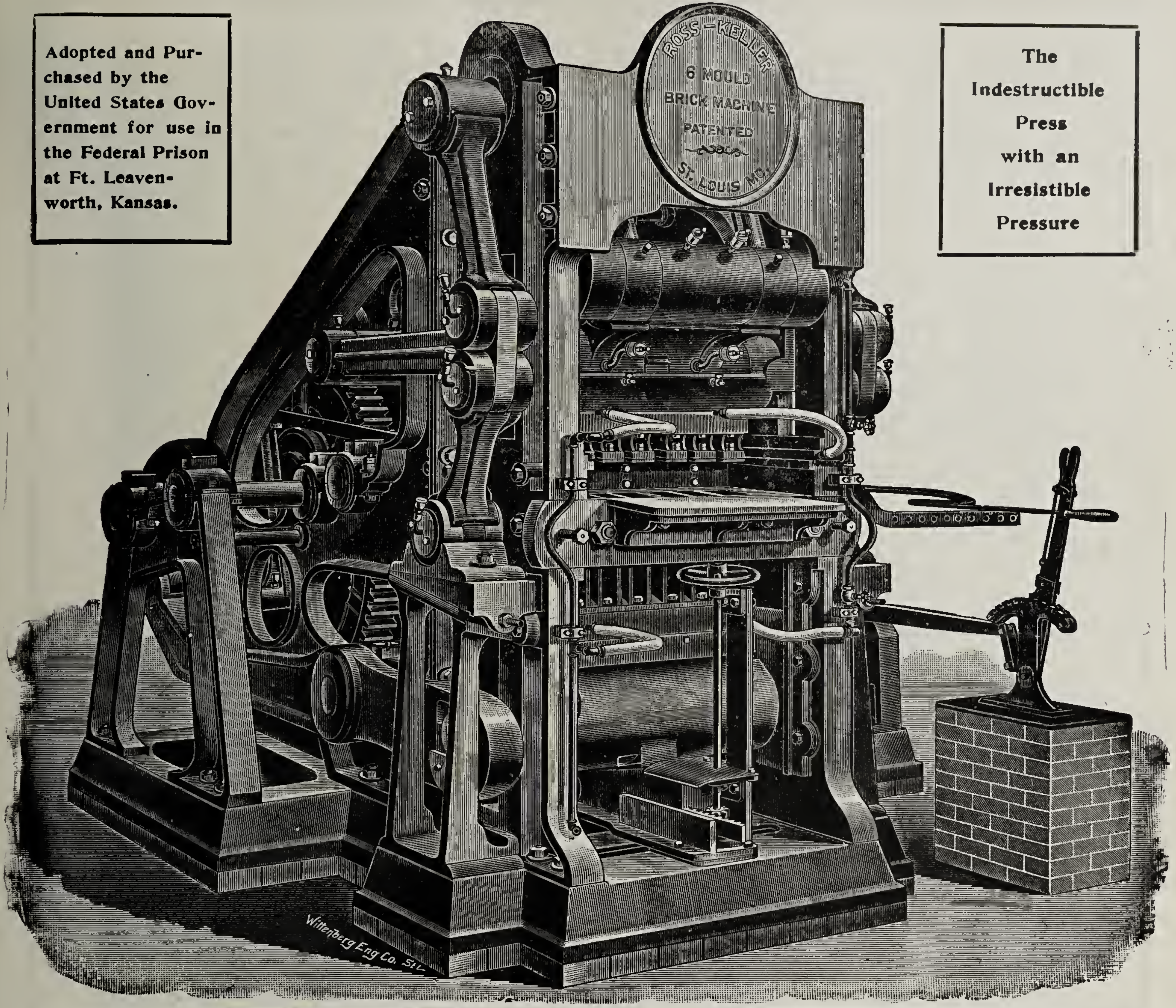
Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The
Indestructible
Press
with an
Irresistible
Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

Ross-Keller Triple Pressure Brick Press

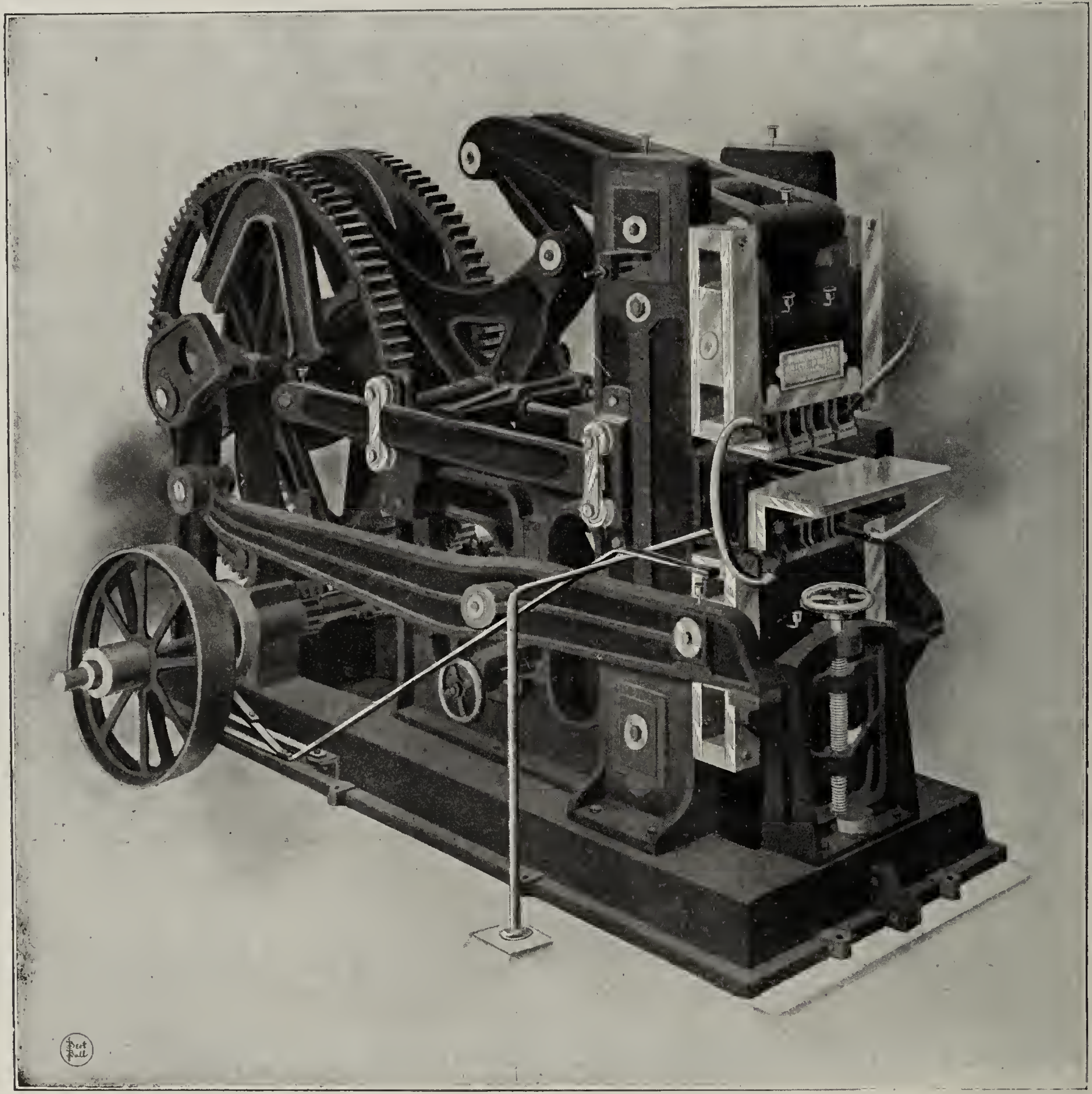
The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - - ST. LOUIS, MO.

The Fernholtz Brick Press

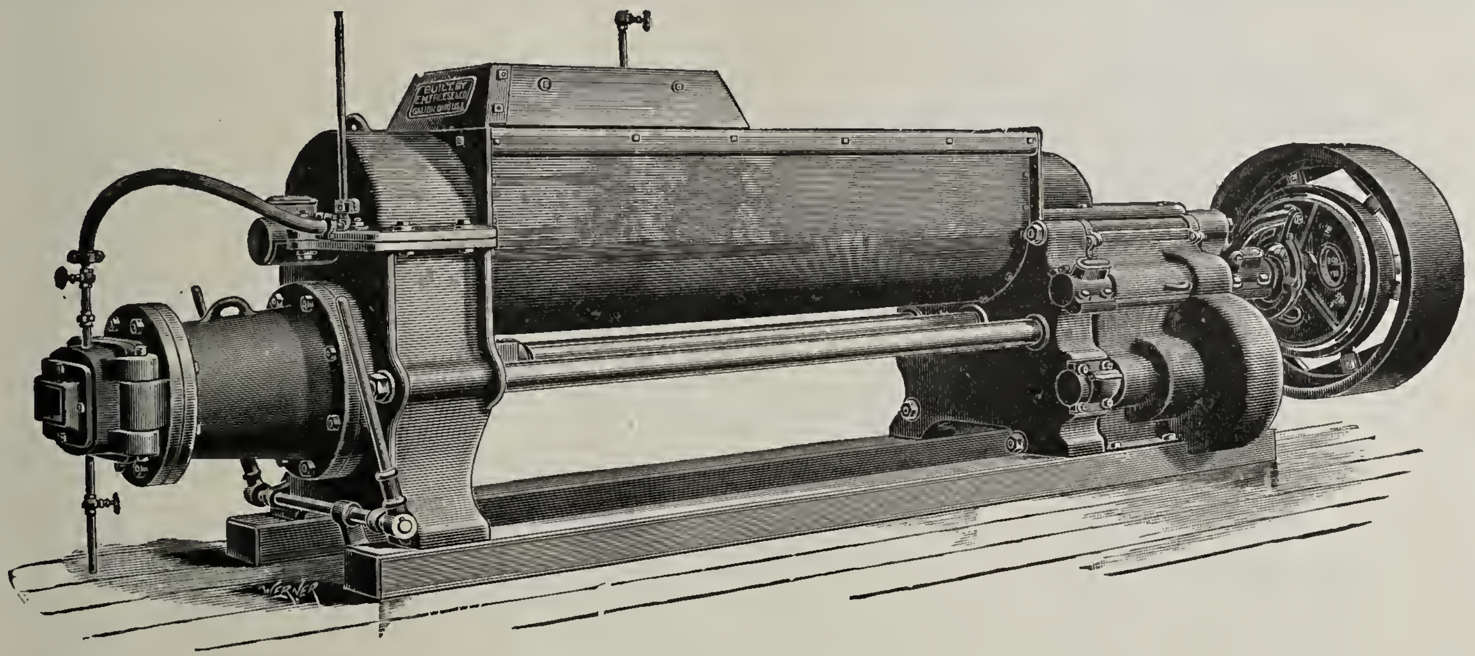
Weighs SIXTEEN Tons, Built for Heavy Work



Holds Pressure on Material Longer and Presses it Harder with Less Power than any other Dry Press

The Fernholtz Brick Machinery Company
1446 Old Manchester Road, ST. LOUIS, MO.

UNION BRICK MACHINES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E.M.FREESE & CO.
GALION OHIO U.S.A.

We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

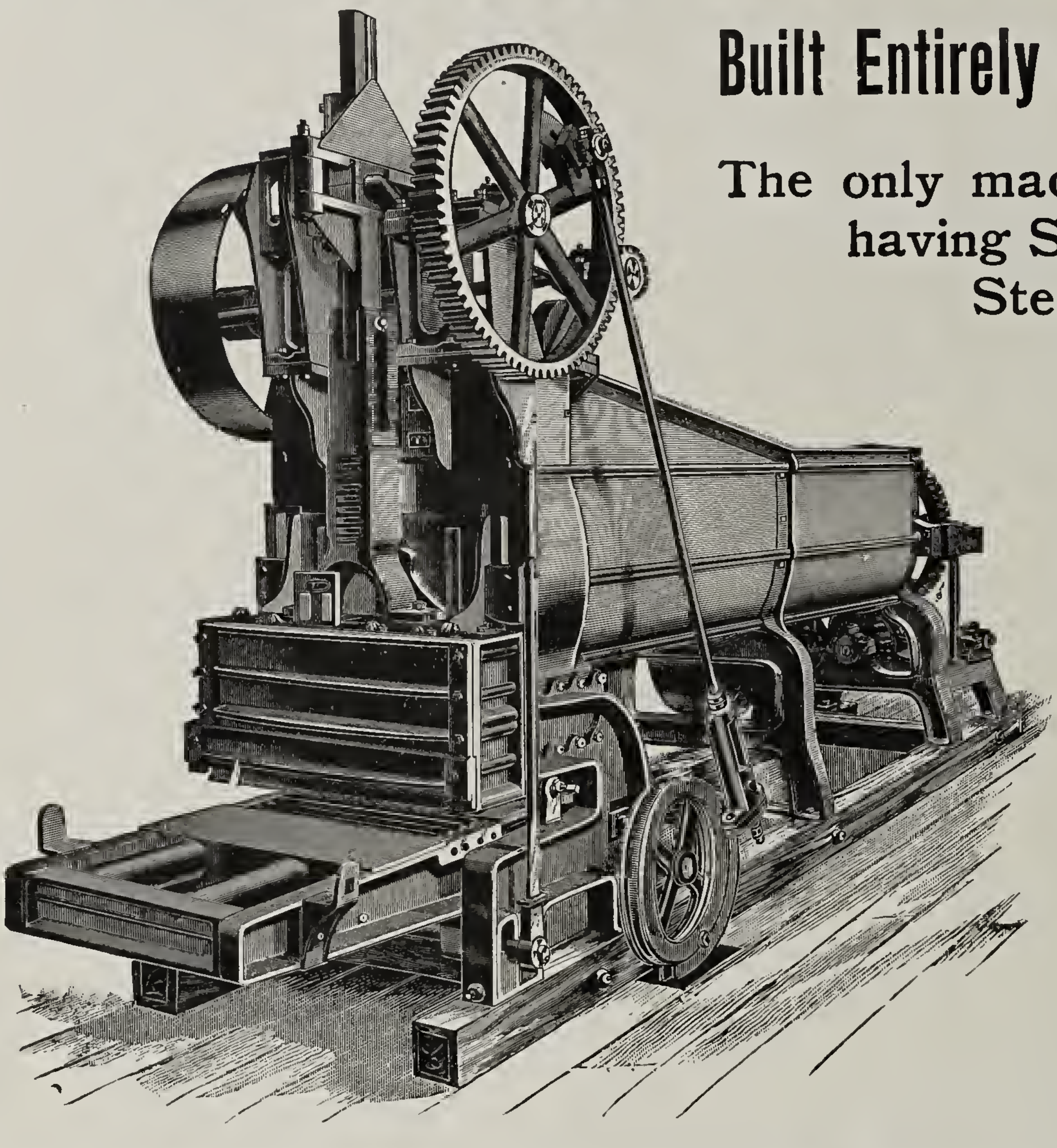
State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

THE POTTS

HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

The only machine of this class
having Steel Gear and
Steel Shaft.

Built of the Best
Material by the Best
Workmen.

Simple, Strong and
Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.

BRICK MOULDS A SPECIALTY

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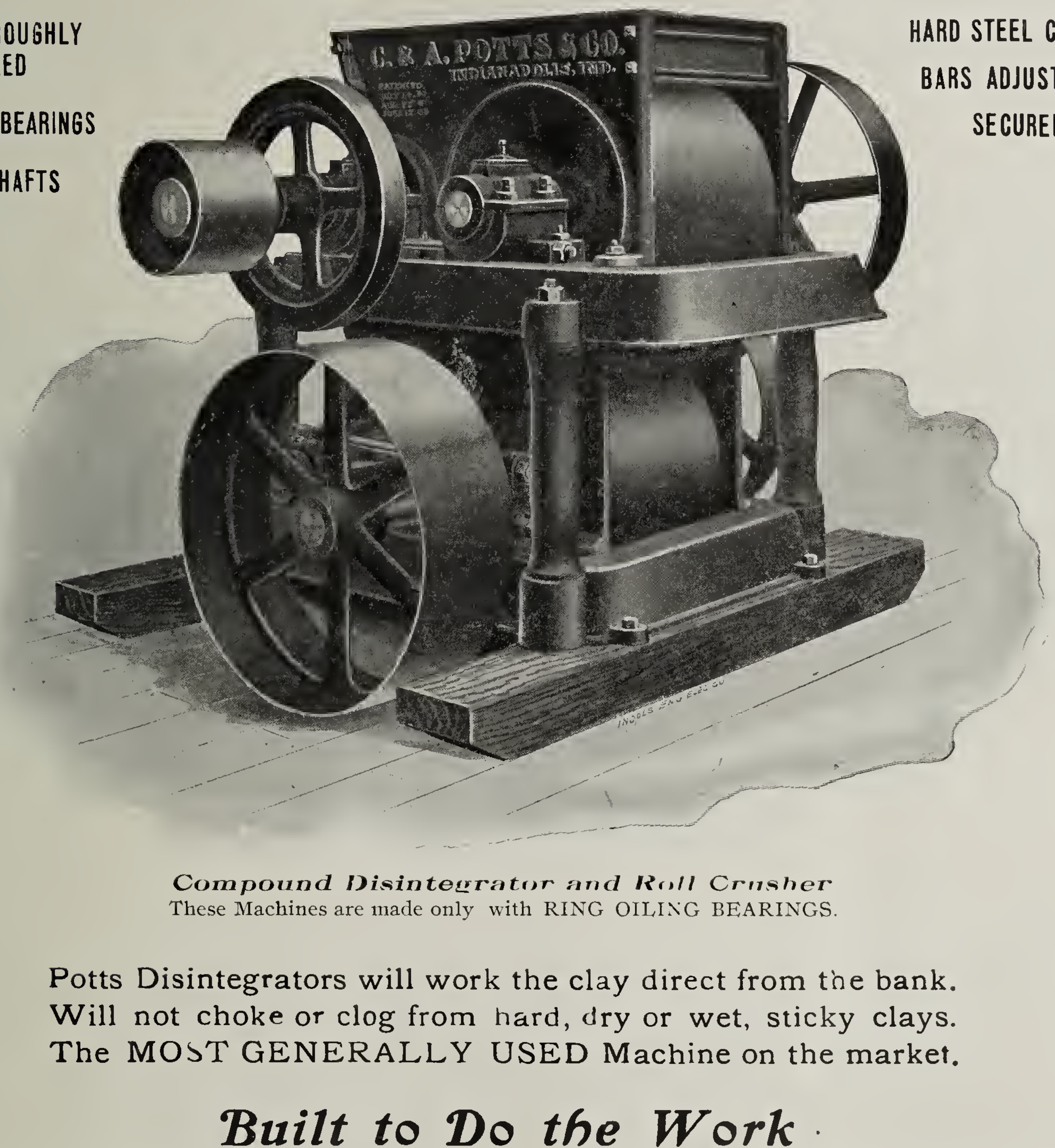
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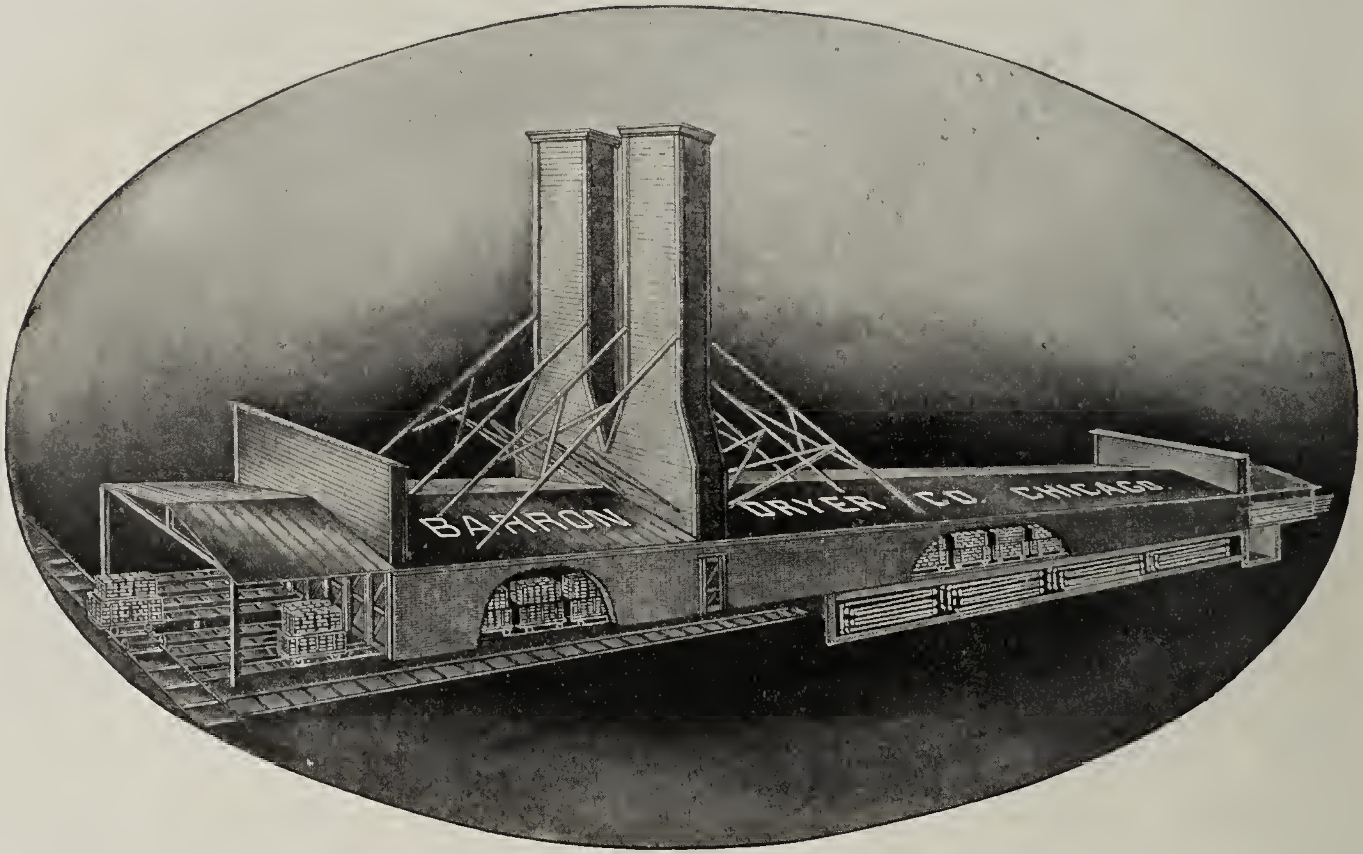
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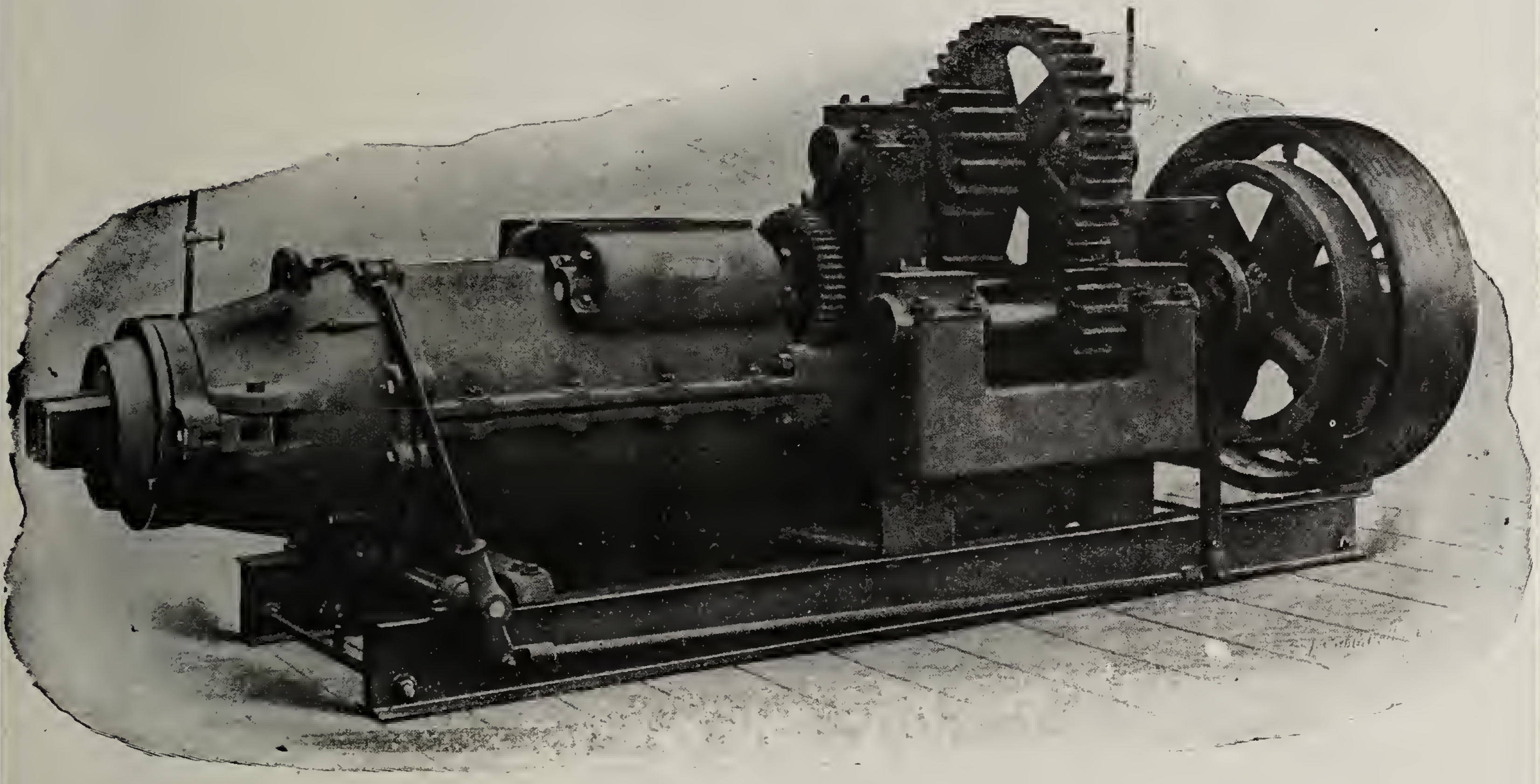

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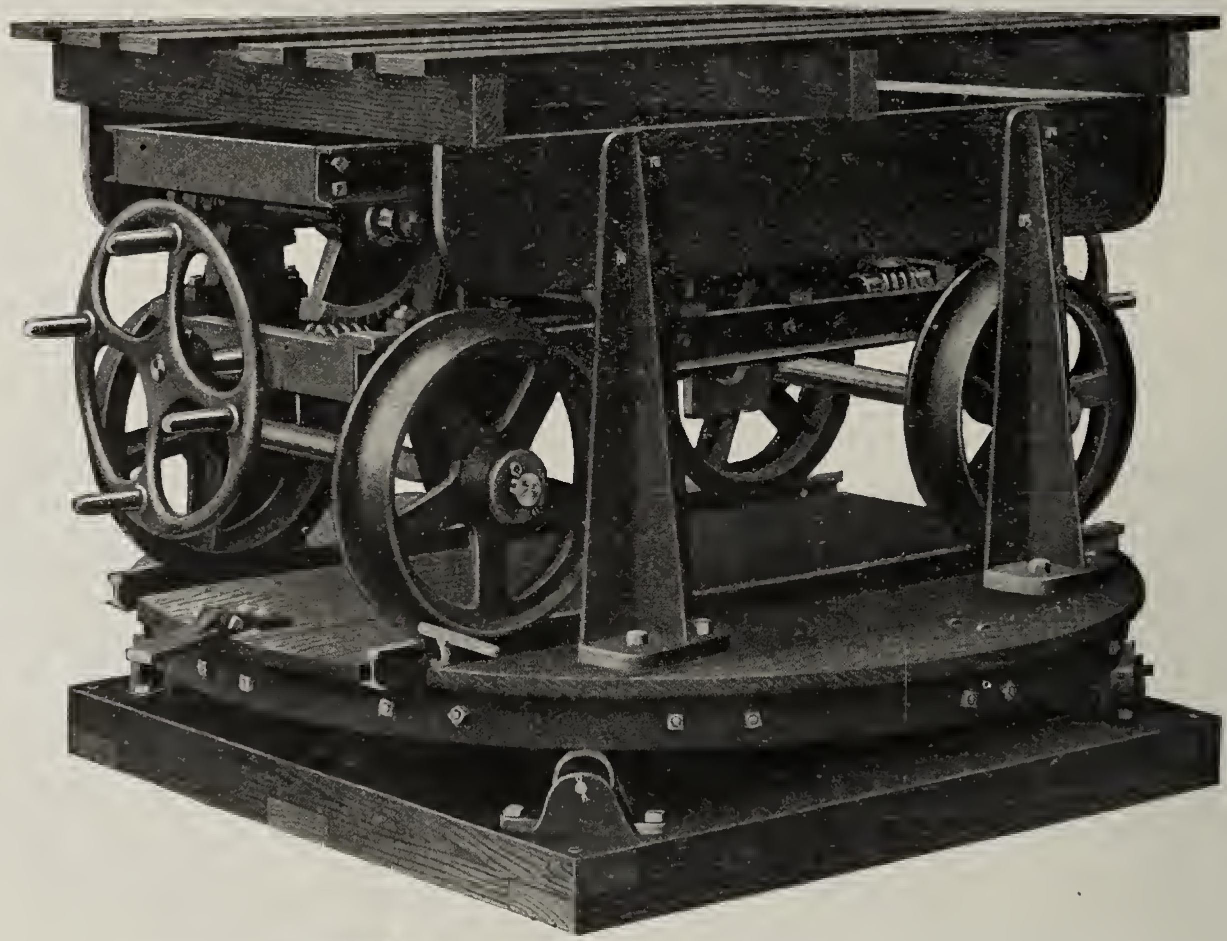

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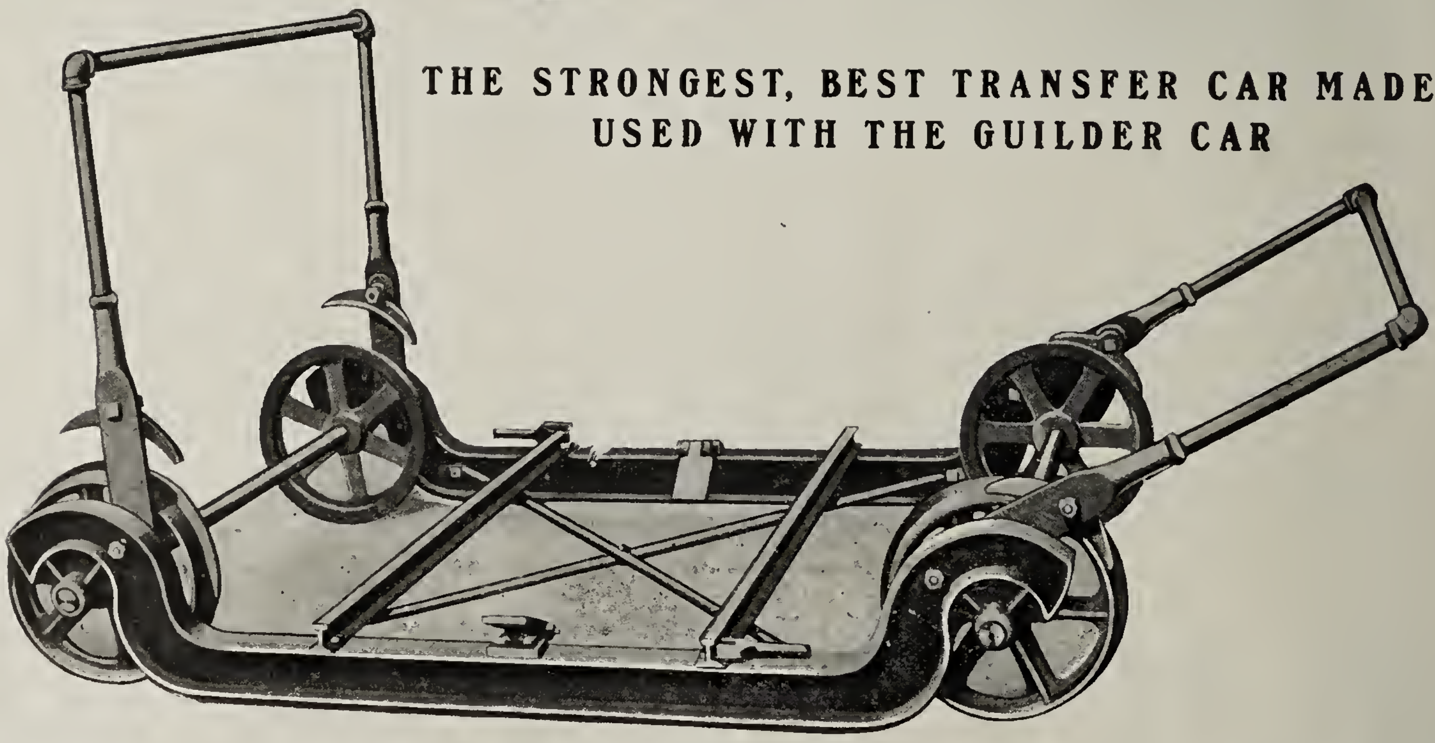

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ILLINOIS CLAY MANUFACTURERS' ASSOCIATION ANNUAL MEETING

FIRST SESSION

The Thirty-first Annual Convention of the Illinois Clay Manufacturers' Association was held at Champaign, January 19, 20 and 21. After the adjournment of the Clay Manufacturers' meeting the Illinois Clay Workers Institute opened up its meeting and held its sessions in Natural History Hall, Urbana, January 21 and 22. The Illinois Clay Manufacturers made the Hotel Beardsley their headquarters, and their meeting were held in Elk's Hall. The morning of Tuesday, January 19th, was devoted in the usual way to making new acqquaintances, renewing old friendships and the placing of clay exhibits, machinery, etc.

President Hammerschmidt called the first meeting to order at 2 P. M. He stated Mr. S. A. Blaine, the Mayor of Champaign, was to have delivered an Address of Welcome but he was compelled to be absent. In his place we have Mr. B. F. Harris, President of the Chamber of Commerce.

ADDRESS OF WELCOME

Mr. President and Gentlemen of the Clay Manufacturers Association of Illinois:

A little girl has said that dust was mud with the water squeezed out. Therefore, as we are *all* dust, and we are long on water here in Champaign, we are all eligible to membership in your Clay Manufacturers' Association, especially if you knead us a little.

I have just had the pleasure of meeting some of you personally, so I knew then and I know now, as I see you all, that you are good fellows, the true blue clay kind and I am sure there isn't a streak of yellow in the whole strata of your organization. But I knew you were good fellows long before I came in here, because good fellows, regular bricks like you, know a good thing and you have expressed yourselves very decidedly in this way, in our favor, and to our intense satisfaction. First of all, you are meeting here today for the fourth time, which pleases us exceedingly; second, you usually elect a new president each year and yet you honored us when you honored our John Stipes twice, with your presidency; and, finally, you have done a great thing for industrial and mechanic arts, for this state and this section by creating and helping to locate at the great University of Illinois,—the School of Ceramics, and they have just discovered how to get all the fat out of the clay and fire and into your pockets.

For all these many reasons, any one of which is sufficient, I am greatly pleased, on behalf of the Champaign Chamber of Commerce, to bid this Association, and each one of you, warm welcome, to this city.

I haven't any of the statistics of your art or trade at hand yet I know you are the most ancient, because, from the earliest times, and even Adam must have fashioned his house and vessels of clay, and Eve probably made the first pies,—of mud. I know that, barring none, your products are the most necessary in all building work. I know that, barring only the living stone and marble, and sometimes not always these, your products are, architecturally, the most beautiful.

Thus in the age, necessity, beauty and imperishability of your work, you are unsurpassed, and, with your rapidly progressing brothers, the cement men, you are fast reaching a position where the steel and lumber men can be relegated to a much less important position.

The sun and rain, the heat and cold, fire and water and the stress of mighty traffic can beat and wear upon your products and they are little scathed.

Your success and growth are closely allied with and wrapped up in that of such associations as I represent here—this afternoon. You are in the habit of moulding and shaping things to suit your eye, your desire, your taste, so, with a habit so well developed, we need hardly tell you to go ahead and shape things up here to suit yourselves, we are all willing to be as clay in your hands,—even if it be *dry clay* and of course dry clay is a little hard to work, but I am authorized to tell you,—you can work us dry. Champaign has more of a wet sound than a dry one, just as Hammerschmidt sounds more like the name of a metal than a clay manufacturer, yet with such a fireproof lot of folks as you are, I suppose you have little use for a water wagon, insurance rates on your stuff being so low, though I presume you tile and pipe men are willing to carry all the water in sight.

We have gotten so used to having you here that we will be greatly disappointed if you fail to continue this as your meeting place. John Stipes is one of our standby's and if there is anything you want that you don't see, provided it isn't too wet, or anything, we can do for you—tell John and we will help him get it for you. Again I bid you warm welcome. (Great applause.)

The President: The response to the Address of Welcome was to have been given by Mr. F. Plumb, of Streator. He could not get away to-day and has so written us. We have instead our old friend, D. O. Loy, of Sheffield, to respond to the Address of Welcome, and to give us a brief history of the Association. (Applause.)

RESPONSE TO ADDRESS OF WELCOME

Mr. President and Gentlemen of the Association: Before reading the letter sent to us by Mr. Plumb, I wish to express the sentiments of the members of this Association when I say that we fully appreciate what Mr. Harris has said in regard to our organization. I may add, however, that I was told that he would present us the keys of the City, and I thought that would be a key to my remarks. Well, we take it for granted that the keys were given us a few years ago have never been returned. That they are in your hands now; those keys that were of gold; and if perchance when I return them, they are mixed with "alloy," the members of this Association will go my security and bail me out if there is any trouble on that score. For our part, we feel that the people of Champaign know that they have the key of our Association—the key of our heart's affection. They won them in the past by the hospitality and the kindness that they showed us in the years that we met here. It was unfailing on their part then as it is to-day.

Champaign has a very charming sound in my ear, for at one time I was a citizen of this place. I presume that there are very few persons, if any, who remember me as I used to trundle on the streets of Champaign a white headed boy, some forty-one years ago. At that time, I was in the employ of Joseph Kuhn, of this city.

This is the letter from Mr. Plumb.

Mr. Geo. H. Hartwell, Sec'y. Illinois Clay Mfgrs' Association, Champaign, Illinois: I am sorry to inform you that I can not be present. However the topic assigned me of replying to the address of welcome can be made by others just as well, and as to the early history of the association which is not a matter of record, *that* is now stored up in the memories of the early members.

I was not a charter member, but joined the association at an early date. We then uniformly met at the Capitol of the state. We were welcomed by the Governor of the state. The association had for its purpose the tile maker and tile users' interests. Our debates run along the line of porous and non-porous tile, up and down draft kilns, the nesting of tile in the burning, the proper size and depth of drains. the state or the trade, price lists, etc.

In a few years we found ourselves working in a sort of a treadmill on problems for discussion. We wanted to enter new fields. It occurred to some of us that a broader field would be the making of our association. We then enlarged our field to take in anything made from burned clay. Hence the name we now have.

Our place of meeting had become somewhat stale so we agreed to break away from the state Capital the years the legislature was not in session. It was soon found out that the session of the legislature was no special benefit to us and then we abandoned the plan of going to the Capital only when wanted.

The change of plan above referred to has proven to be no mistake. As you all now well know it is among the best of state associations in dignity and importance. Most of us can testify as to its value to its members. Its social and educational value will justify its existence. I trust you will have a good time.

Very Respectfully,

FAWCETT PLUMB.

As I stand here and hold this paper in my hand, I tremble because, well, I know that I am unworthy to fill the place of the person whom our secretary selected to give the history of our Association. It is true that I have been in the tile business a long time, nearing forty years. I have been in the ditch a great deal of the time and ought to be able to tell much of tile making, ditching, etc. But I am here on this occasion without any thought of preparation and the best that I can do is to call to my memory in a brief way some of the happenings of these years, skipping necessarily many of the important things that have occurred to us from year to year in the meetings of our Association.

This is our thirty-first anniversary. I thought until to-day that I was a charter member. Being called to make a few remarks in response to the Address of Welcome, I had occasion to refer to the books and I looked in vain for my name at our first meeting. But I think I was there. I was in Springfield, but perhaps I failed to find the Capitol. I have a clear recollection of a great many things that happened at that first meeting. It cannot be possible that I have that recollection just from reading. Referring to the second meeting, I have vivid recollections of many that were present at that time. It is not my purpose to mention names, but we do remember. You go back with me now in memory and you think of the brothers that were with us then. Some of them are living to-day and some have gone beyond. But we call up our first meetings at Springfield and we can recall the perplexities that beset us as we discussed the different questions that came before us as clay manufacturers. And why? Because we had entered a new field. We were new in the business. The most of the men engaged in tile making at that time knew but little about working clay. True, some had been in the brick business for a good many years. As for myself, I had been working at brick making, but tile making was new and it was pretty hard to overcome the obstacles.

When we went to Springfield we were told that it was impossible for us to make a success in making drain tile from our common surface clay. We were divided. We had the fire clay men to oppose us. The majority of the men engaged in tile making and visiting and attending our meetings at that time were making tile from surface clay and we were having trouble. We would see the fine samples that those men would bring to the convention and present to us and we would go from the convention feeling that, after all, our investment would prove a failure.

I wish to speak of a little experience that I had myself. I was working the surface clay and making rather a poor tile. Let me say, however, that in the beginning of tile making, one-half of the tile were burned in kilns unfit for use, and at that time we were using the up draft kiln. So I would go home feeling discouraged. In 1882 I carried home with me an ordinary tile; I was afraid to let my customers see that tile. So I carried it out to the factory and experimented with it. It occurred to me that the tile was deceptive. It did not seem to be hard enough burned, yet it was a beautiful glazed tile. I took from the pile of tile that I had in the yards a four inch tile and I carried the two out to where I was making brick, and I laid them down side by side and exposed them to the elements during the winter. Imagine my joy, my delight, if you please, when the next spring I found that that beautiful tile had gone to pieces and that the one that I had made out of the common clay was as sound and good as when I had placed it there. So we had all that to contend with. We know to-day, at this meeting in the City of Champaign, surrounded on all sides by the richest clay in the known world used in the making of tiles, giving perfect satisfaction, we know that it was a mistaken idea of our brethren in Springfield when they tried to discourage us from using surface clay.

A few of our brothers who met with us in those long gone by years are still with us to-day. A very few of them are here. A few are living, scattered about the different portions of the world. I wish to refer to our greatest help at our meetings at the very beginning of tile making, at least in this State. There were many things to encourage us for as a rule the men that were interested in making tiles from surface clays were free to give you the best information that they possessed to help you along. But we had at that time a gentleman who came to us and who became our guardian. I refer to J. J. W. Billingsley, of the Drainage Journal, which was always full of valuable news that could not be read without benefit. But he gave us more than that. It was because of his great mind, his masterly mind, because of his knowledge of the absolute benefit of upper drainage by the use of drain tile and the possibility for the future use of them—it was because of that that we were encouraged from time to time, and I think it did us more good than anything that came to us in the way of help. But he did more than that. He visited us at our homes and at our factories, and I give to J. J. W. Billingsley the first place. I give to him the first place all along the line.

Then we have the Clay Record, Brick, and the Clay Worker. All those journals are entitled to large credit for the help that they gave us from time to time in building up the drain tile industry of this country.

Of course, I cannot recall to mind the names of our Presidents in full. J. K. Reader was the first President. Along in the early days, I think it was in 1884, E. M. Pike came smiling into our midst. He was a source of enjoyment to us during the years he was with us.

In regard to the advancment in the drain tile industries, some of you who are here to-day remember the styles of factories that we had thirty-one years ago and the disadvantages that we had to labor under. But thanks to the inventor and to the draughtsman and to that class of people, improvements were soon brought about that gave us opportunity to make profitable changes. We had a demand for all the tile that we could make, at good prices. Some few of the early tile makers went right on to success, and some who first began tile making in this State have retired with fortunes. There are many things that ought to be said. I wish, Mr. President, that I could recall to mind and tell you the things of importance that have passed before us during the last thirty years. 1893 was the year when the demand in Illinois for drain tile exceeded the supply, and the reports that were made at Springfield on that occasion were the means, I think, of the building of many tile factories during the next three or four years. Every member, except one, at the convention had glowing accounts to give of the business that they had enjoyed during the past year. Dr. Lyon lived near Keokuk, just on this side of the river. I know that some of you remember him. He got up and made a very nice talk. He said, "Gentlemen, I am not enjoying the great blessings that you are. I have been in the tile business for three years and I have my first customer to get." I afterward visited him at his home. He was making good tile; he had a kiln about thirty feet in diameter. He was making good tile for his own use and was not offering them for sale.

The present we all know. The past we can review in our own minds. It is not my intention to refer to the present, except to say that conditions have changed and instead of the old up-draft kilns and tumble down factories, many have factories to-day with first class machinery and have increased their capacity thousands per day compared with the number of tile made at the beginning. As much as twenty-six or twenty-seven years ago the question of ditching by machinery came up and it was discussed at length. Mr. Plumb said to us that the time would come when the ditches would be dug successfully by machine and they would be used extensively wherever tile drainage was done. It was my pleasure last Friday to spend a day on the Burlington branch, about fifteen miles from Sheffield, my place of business. I sat for hours, for I enjoyed it, on an improved ditching machine and with my eyes I watched it go down 4½ feet and deliberately take out and deposit surface dirt at the side of the ditch, going along at the rate of 35 rods a day, and they were working short hours, cutting through 12 inches of hard frozen ground. Two men were following the ditcher and laying 12 inch tile. It was a perfect success and so Mr. Plumb's prophecy was fulfilled. I presume a good many of you gentlemen here have watched these ditching machines doing work.

In closing, each one of us no doubt will review the past, even as we go back to our homes from this city, and we will think of our friends that have gone and of the others that are living. Of the friends who are still living, we hope to see more of them; and of the friends who have gone beyond, we can only say with the poet, who is dead and gone:

> The departed, the departed
> They visit us in dreams
> And glide above our memories
> Like shadows o'er the streams.

(Applause.)

President Hammerschmidt then announced that in accordance with the custom of every convention, there was a Question Box in which members could deposit the questions they wished to have discussed on the floor. He then delivered his own Address, as follows:

PRESIDENT'S ANNUAL ADDRESS

Gentlemen: Fellow Craftsmen: To-day we meet here for the thirty-first Annual Convention of the Illinois Clay Manufacturers Association, in these beautiful cities of Champaign and Urbana the home of one of our best Institutions in our great state. It is a school for us all, young and old, and with every branch of trade represented. Four years ago through the united efforts of this Association and Prof. C. W. Rolfe we succeeded in getting an annual appropriation, although not as large as we would like to see it, still enough to make a start. Now the Department of Ceramics in the University of Illinois is as good as that of any in the United States.

I wish to call your attention to the Clay Workers Institute to be held this week at the University. A splendid program has been provided and every clay manufacturer should attend from beginning to end.

I have tried to go to every Clay Manufacturers' meeting I could, and I think that every brick, tile, and sewer pipe maker, or any other mud mixer, should attend our state meeting for the sake of helping to make the meeting a success, and to further good fellowship and knowledge. Every clay manufacturer tries to make his product cheaper and better, and if you will watch the one who attends these gatherings, both State and National, and see what he is doing, you will find him to be the one who makes progress both in his product and in his bank account.

In 1880 I attended for the first time the meeting of this Association at Springfield, and since then, have missed only two meetings. These were on account of sickness. If my recollection serves me right, there were 35 tile makers at my first meeting, and since then many of them "have gone yonder to that bourne from whence no traveller ere returns." In those days we talked mostly of how fast we could make drain tile and how long we should watersmoke. Then we burnt a kiln of drain tile from 6 to 8 days. It took us 4 days to watersmoke, now we watersmoke and burn the kiln of tile in from 40 to 60 hours. We have learned this through our Association. We have also learned through it to improve our buildings, our machinery, how to mix and treat the different kinds of clay to avoid lamination, and many other useful things too numerous to mention here.

I am glad—indeed proud, that the paving brick men have joined hands with the brick and tile makers and have become good active members of the Association.

An advanced chapter from Mineral Resources of the United States Calendar for 1907 puts Illinois in the first place for the quantity of common brick made. Illinois made 1,494,807,000 while New York in the same year made 1,194,210,000.

In closing I wish to thank particularly Mr. Geo. H. Hartwell, our Secretary and Prof. C. W. Rolfe for making all the arrangements for this session, also those who have kindly contributed to our program, and lastly I want to thank you all for the interest shown in our Association by your attendance, and for the help toward success of the Thirty-first Annual Convention of the Illinois Clay Manufacturers' Association. (Applause.)

The President: The next item on the program is a paper by Prof. C. W. Rolfe, Director of Ceramics, of the University of Illinois. His subject is "Some Thoughts for Illinois Clay Manufacturers and a Report of the Doings and Wants of the Ceramic Department of the University of Illinois."

SOME THOUGHTS FOR ILLINOIS CLAY MANUFACTURERS

It seems to the writer that the clay industries of this country, in so far as they endeavor to produce structural materials, are passing through a serious crisis, and the position they take on questions now pressing for solution must settle their relation to the other industries now disputing their dominant position as producers of building materials. The shameless abuse of our timber resources has made it very evident that we cannot in the future look to our forests as the main source from which our materials for building are to come; for, while it is true that as a result of the civic revival now going on much of the devastated area will probably be replanted in the near future and will in time come to yield large quantities of lumber for finishing and general interior work, we can hardly except that the supply will ever again be large enough to be looked upon as our main source for building material.

In the United States with its great area, healthful and productive climate, fertile soils, large proportion of unbroken surface, unparalleled natural resources, and a population approximately only one eighth as dense as that of Europe, the future must bring large demand for building materials, and so far as we can now see this demand must be mainly met from four sources, clay products, hydraulic cement, sand lime products, and natural stone. Other combinations of mineral substances will doubtless be invented but it now appears that we must look to these four as the principal sources of supply. This demand will certainly be large enough to enable each of these industries to reach its highest development along lines of growth which are at the same time normal and intelligent, and since every industry which uses natural materials that are abundant and consequently in themselves of little value and converts them into products which add largely to human welfare is thereby increasing the wealth and general prosperity of the whole nation, all loyal citizens should see to it that every such industry has the opportunity to do all that it can in its particular line.

We are living in a period of restrictive legislation. The entire absence of caste and of restrictions of every kind which would prevent the humblest American from reaching the highest positions of honor and trust has generated in the breast of every citizen a desire to reach the highest social advancement and to obtain the largest possible share of material comforts, but in his efforts to reach this end he often forgets that in the long run the welfare of the individual is bound up in that of the race and so adopts methods which are in direct violation of the principles of the golden rule. The tradesmen, fearing the effect of too great competition, limits the number of apprentices that may be employed and so denies to the coming generation that liberty of choice which lies at the very foundation of American citizenship; acting on the same principle, manufacturers and tradesmen generally endeavor by fair means or foul but by every means within their reach to cut down competition and reduce the number of those who may profit by the demand for their own or nearly allied industries.

To the mind of the writer this course is not only wrong but it is actually suicidal. The spirit of repression as applied to others engenders a mental attitude which does not favor a healthy mental growth and consequently does not lead him to put forth his strongest efforts to increase the adaptibility or improve the quality or quantity of his product. In proportion as he feels his power to control the output of his competitor by repressive legislation, or by any other means, he loses his desire to improve his own product. He has used a portion of that energy which would naturally be given to betterment, in holding down his neighbor and in that degree has become self satisfied and lost the power of progress. In so doing he unwittingly invites some stronger man, who recognizes the growing moss, to enter the field and take that which a more intelligent course would have enabled him to hold.

Applying these principles to the case in hand, we have the four industries named above competing for the opportunity to fill the demand for building materials. Would it not be well for every one engaged in these industries to recognize that all four have come to stay, and that all four ought to stay because each is able to manufacture materials that are really useful to the builder and to make them of substances which if not used in that way would be relatively worthless. Each of these industries is contributing to the general well-being of the community and should be encouraged to its utmost exertion by the community. Each industry is able to market its commodities in certain communities more cheaply than any of its competitors because of the favoring location of the deposits from which its products are made. Certain products of each industry are better suited to particular uses than any which can be made by the others. The future growth of our country and the inevitable large increase in population which its mineral resources invites will certainly create a large demand for the products of each of these industries. Why then should either seek for repressive measures that may be applied to the other? Why should those engaged in either industry spend their time in trying to prove that the other fellows' products do not measure up to the popular demand, and thus use up energy in trying to analyze and measure the mote in his brother's eye, which perhaps might better be applied to reducing the size of the beam in his own? Would it not be better if all these people engaged as they are in closely related industries, could be induced to pull together and use their combined energy for the improvement of building materials in general, in a spirit of helpful and friendly rivalry, a rivalry which is constructive and not destructive. The writer has little sympathy with the retrogressive tendency which seeks to build up an industry by disparaging the efforts of a rival concern, or with the narrow secretive policy which guards the door of the factory with a bull dog and shot gun lest some competitor shall pick up and apply a secret method whose very possession is keeping the owner of the factory from becoming the progressive, aggressive factor in his industry which he would otherwise be. Such a policy seems to be a confession of intellectual inferiority on the part of the holder.

These paragraphs have been written because it has seemed to the writer that in reading the journals devoted to these four industries he has found in nearly every case more of a desire to tear down the other industries than to build up its own, and he thinks this is at least unfortunate. He believes that the industry which first changes its course and devotes all its energy to the betterment of its own products will soon find that it has far outstripped its competitors and gained possession of the coveted field. This success should in turn stimulate the others and cause all in time to move to a higher plane. Our buildings would in consequence be more convenient, artistic, and stable and the community more comfortable. All this because those engaged in one of these industries elected to pursue an unselfish enlightened course, making improvement in quality and adaptation to new uses its watchword.

May we not hope that the Clayworker's Association of Illinois will take this advanced position and devote its entire energies to the largest possible development of the clay resources of the State maintaining all the time a broad minded, friendly, helpful attitude toward their brethern of the allied industries? May we not hope that every member of this Association will show as strong a desire to give the useful things which he has learned to his brother clayworkers as to get from them the things which they have found useful?

It seems to the writer that there are many topics which might well be considered by the Association and he believes that if its members would each year appoint committees which would thoroughly investigate such questions as are found below and report at this annual gathering, much good would certainly result. It may be difficult at first to find members who are willing to make the personal sacrifice which service on such committees demands, but that reluctance will wear away as soon as they come to realize the personal benefit which will come from arousing a spirit of investigation among the workers in their own plants.

As a starter, the writer begs leave to suggest the following topics for your consideration.

1. Are pyrometric cones a really useful adjunct to the control of the burner in firing his kiln? If found useful, what principle may be enunciated to guide the burner in their use? How can yard owners be induced to provide, and burners to use, them? Should other methods of pyrometric control be installed in the kilns of the small, as well as the large, yard? Will the use of cones or the installation of other devices of this kind pay the owner of the small plant?

The writer visited a small plant a short time ago in which several thousands of dollars are invested but the product was exceedingly poor in quality. The proprietor had been engaged in the business many years and formerly was successfully but latterly his "luck" had changed. He said his stock of good clay was exhausted and his new supply was of poor quality. The writer has reason to believe that the clay was all right but the proprietor did not know how to use it. His methods of manufacture seemed fairly good but his burning was very faulty. He depended entirely upon his judgment for pyrometric control. He had heard of cones but had no idea how they were used and seemed to regard their use as a new-fangled notion which did not amount to much anyway. The result, as I have said, was poor brick and business failure staring him in the face. Both might have been avoided if the proprietor had been well informed. There is reason to believe there are many such plants doing business in Illinois and their products are being compared with cement products, with a result wholly favorable to the latter. This unfavorable opinion reacts on the progressive brick maker and tends to set popular judgment against his product also. Could this Association further the clay working interests in any better way than by finding means to induce their benighted brethern to use more enlightened methods in their business?

2. Is it desirable that building brick should be vitrified? Can whitewash and dampness be avoided in any better way? Can methods be devised by which clays now supposed to be commercially unvitrifiable may be vitrified? I am told that one of the largest building brick factories in Illinois vitrifies practically all the builders it puts on the market, and warrants them against these two faults. Is it desirable that this should become the custom? A non-absorbent brick wall of pleasing color and free from efflorescence is one of the best advertisements the brick maker can have, while the reverse injures his reputation seriously.

3. In what way can the brick maker bring influences to bear on the manufacturers of lime and cement to induce them to put upon the market grades of these bonding materials which will not cause efflorescence?

4. To what extent, if at all, is it desirable that brick should be cored? To what grade of clays may coring be applied in such a way as to cheapen the product without injuring its quality? There are factories in which coring increases the first grade output by one-third without anything like corresponding cost of operation. To what extent could this method be employed with Illinois clays?

5. To what extent can the process of veneering be applied to Illinois clays? What colors can be produced in this way? Would it be desirable that this Association appoint a joint committee of manufacturers and architects to devise a system of veneers which could be easily applied, would produce desirable colors, would lend themselves readily to artistic architecture, and so increase the attractiveness of brick structures?

6. The recent great disasters by fire and earthquake have set people thinking as they never thought before about the durability of buildings and the fitness of walls to withstand such strains. People have been comparing walls made of various materials in which different methods of construction were used and brick have not stood the test as well as they should have done. This is largely due to insufficient bonding, and this again has been brought about partly by lack of care in the selection and manipulation of the bonding material and partly because the bond does not fill the openings between the brick, and so considerable portions, especially of the ends and edges are left with little more bond than if they were piled loosely.

Another difficulty is that too much bonding material is used. It is almost universally true that this mortar has less strength than the brick, especially when the layers of mortar are thick, and so it comes about that the strength of the wall is that of the mortar and not of the brick. It thus becomes a matter of large importance that the mortar be made of the best material, be applied in thin layers, and be made to fill all openings between the brick.

It is a matter of grave importance to the brickmakers of the country that brick structures should not suffer in comparison with those made from other materials in their ability to withstand serious disasters, and so it becomes a matter of large interest to them not only to make good brick but to see that they are properly laid in the wall. Is it desirable that this Association appoint a joint committee composed of manufacturers, architects, builders, and members of the masons unions to see if some means may not be devised to make the walls of brick structures approximately as strong in every way as are the brick themselves. Refreshment.

Perhaps your patience should not be taxed further at this time with these matters. Enough has probably been said to convey a clear idea of what is in the mind of the writer, and he hopes enough to make you feel as he does the desirability of action along these lines. It is quite likely that other questions will occur to you that are more pressing than any of those mentioned. Permit me to suggest again that this Association appoint committees each charged with the investigation of an assigned subject; that the secretary be *ex-officio* a member of each of these committees, and that it be made his duty to correspond with the members of each committee regarding the progress they are making at least once each quarter.

In its investigations, the Ceramic School at the University of Illinois has attempted to follow these same lines and has completed the investigations described below. These have been gone into with unusual thoroughness and have entailed a very large amount of work which we hope you will feel was justified by the results.

At the time of your meeting last year the following subjects were under investigation and the character of the problems was then explained to you. These investigations have since been completed and the results published as Bulletins 7, 8, and 9 of the Department of Ceramics. These bulletins have been sent to all who applied for them. In case any others wish copies, please send a letter to the Director in care of the University and they will be forwarded.

Bulletin 7 is entitled, "The Influence of Fluxes and Nonfluxes upon the Change in Porosity and the Specific Gravity of Some Clays" by Professor A. V. Bleininger and J. K. Moore (a senior student). It is practically a continuation of the studies in Bulletin 3, but is based on a large series of new experiments and the problem is attacked from a different standpoint.

Bulletin 8 is entitled, "A Study of Heat Distribution in Four Industrial Kilns," by A. V. Bleininger. This is practically a heat balance sheet showing the complete income and outgo in five types of kilns; viz., one sewer pipe kiln, one paving brick kiln, two terra cotta kilns and one building brick kiln. This work should form the foundation of studies which will result in a great saving of fuel. Professor Bleininger will explain how the experiments were conducted and show how the results may be made of practical value at the Institute Friday morning.

Bulletin 9 contains three studies: (a) "A Cheap Enamel for Stone ware" by R. T. Stull, in which magnesia is substituted for the much more expensive oxide of Tin; (b) "The Viscosity of Clay Slips," by A. V. Bleininger, a new and exceedingly delicate method of determining the plasticity of clays; (c) "Note on Some Fusion Curves," by A. V. Bleininger, in which the changes which take place when a mixture of feldspar, ferric oxide, and whiting is heated to the melting point are graphically shown.

It is, of course, understood that in each of these investigations Professor Bleininger was assisted by one or more students from the department, who were in this way brought into actual touch with experimental work done on a practical basis.

After the completion of these studies a new series was begun, three of which are now practically completed. These are:

1. A Study of an Illinois Joint Clay. The joint clays are exceedingly plastic clays of glacial or alluvial origin in which there has been developed a peculiar tendency to separate into cubes on drying, and no matter how thoroughly the clays are pugged they still retain this tendency. Freezing or suspension in water will sometimes but not always break it up but no mechanical means for doing this has yet been found. In addition to having this troublesome structure, the clays are very fine grained which makes them difficult to handle even after the structure is broken up. For these reasons, joint clays have usually been considered as almost worthless. Professor Bleininger with the assistance of Mr. Lehman and Mr. Stull has found a very inexpensive method of handling these clays, and he finds that after treatment they are easily handled and make excellent brick. It seems probable that the same method applied to any fine-grained clay which gives trouble in drying would greatly improve its working qualities. Professor Bleininger will tell of the results of this investigation at the Institute Friday afternoon.

2. A Study of Slips, Engobes and Enamels for Stoneware, Enameled Brick and Terra Cotta, by Instructor R. T. Stull. For this study, Mr. Stull prepared a very large number of mixtures which it was thought might produce valuable engobes, arranging them in series similar to those used in the studies of glazes (Bulletin 2, pts. I and II). As a result he has found the range within which such mixtures mature into valuable enamels and engobes and what is better has found that they may be applied to many Illinois clays with excellent results. He will explain the process and show samples illustrating his results in two exercises at the Institute meeting, Thursday afternoon and Friday morning.

3. A Study in Porcelain Bodies, by Professor Bleininger assisted by Mr. R. T. Stull. In this study, Professor Bleininger has endeavored to trace the changes which take place in the firing of white ware bodies. It is really a continuation of the work in Bulletins 3 and 7 as applied to the highest grade of clays.

4. In addition to these, Mr. J. M. Knote, instructor in Ceramics is now engaged on a study of some refractory clays. This is a study of the Pyrochemical behavior of the best fire clays at very high temperatures.

In all these studies, the instructors have been ably assisted by many of the students of the department, who have shown much interest in them. On account of the very cramped quarters in which the department is compelled to do its work, not much effort has been made to secure students. We have now 22, divided as follows: Seniors, one (Mr. R. R. Smith who appears on the program for Thursday morning with a paper on paving brick); Juniors, four; Sophomores, seven; Freshmen, five; Specials, one; Graduates, four. This is as large a number as we can comfortably accommodate in our present quarters. The unfortunate action of the Senate committee just at the close of the last session of the Legislature in cutting out the item asking for a building has seriously crippled our work during the last year and we want to ask for a somewhat larger sum this winter for the same purpose.

In spite of the serious inconveniences under which they have to do their work, the students are all interested and most of them are doing exceedingly well. Both Mr. Fox and Mr. Moore who have finished the course have won the esteem of their employers and promise to become progressive and influential members of the fraternity. Mr. Fox is now

So much for what we have done and are doing; now for our needs:

As was said above, it is almost absolutely essential to effective work that we secure an appropriation from the legislature for a Ceramics building. Two years ago, we asked for an appropriation of $10,000 for a one story structure 60x 120 feet in area. During these years, the work has expanded to such an extent that it cannot be properly housed in a building of that size. It is now proposed to ask for a two-story structure of similar size with the walls so designed that a third story may be added whenever the need for it becomes apparent. It is estimated that such a building could be erected for something like $25,000 and that we would require with Mr. Butterworth in Danville and Mr. Moore is with the Denny-Renton Clay Co., of Seattle.

at least $5,000 per year for additional equipment.

Owing to the large demand for well educated men among the better equipped clay working plants, good salaries must be paid in order to secure the kind of men we must have as instructors. We can hardly get along with less than three men and their combined salaries should amount to at least $6,600. Besides this, a research fund of at least $3,400 should be provided.

To summarize, then, we shall need $25,000 for building and $15,000 per year for salaries and maintenance.

The securing of this amount from the legislature must be largely your task. The University will lend all possible assistance but its officers have many interests to look after and you must regard this as your bill and see that your needs are adequately presented if you wish to have the work continued. It is for you to say whether the benefits which the clay-working interests are receiving from the school are such as to warrant the trouble to which you will be put in pushing this matter before the legislature. If you think it is worth while, you should have no hesitation in urging it, because it is your right. The clayworkers of the State pay large amounts each year in taxes as do other industries and it must be generally understood that a considerable proportion of the taxes will be helpful to the industrial classes. The State has no right to expend this money to aid individuals or to promote private interests of any sort but whenever a considerable class of workers can show that they need help which can be supplied from this source, they have a right to demand their proportion of it, and they are not properly attending to their own business if they do not see that their representatives do their duty in supplying the need.

The writer feels perfectly at liberty to urge this matter upon your attention because no part of the money so appropriated will come to him. He has never received one cent from the appropriations secured by you. Whatever work he has done has been done because of his interest in the development of Ceramics in Illinois and his desire to see her large clay resources properly used.

In closing, he wishes to extend to you the thanks of the school, of the University and of all who desire the improvement of our clay products, for the support you have given in the past and to ask that both by individual work and through the committees which you shall appoint this support shall be continued.

At the conclusion of Prof. Rolfe's paper President Hammerschmidt announced the meeting open for discussion of questions.

Mr. Stoll: In regard to the appropriation, usually the final test is at the end of the meeting. Just as soon as they get through with their little domestic troubles in Springfield they will make their committees. Then the bill should be presented to the Legislature, the work from that time on is to watch the bill and attend to it when it comes up for consideration in the Committee to which it is referred. It seems to me that it would be a good idea to have somebody who could look after that.

Secretary Hartwell: There is a standing Committee on Legislation.

Mr. Stoll: There should be statistics prepared as to the number of manufacturers, the number of men engaged in the work, the value of the industries, and we should have that data in printed form so that I, for instance, can send a copy to the representative from my district. And each and every one of you should do the same. I wrote, I think, five or six letters last year and some of the people that I wrote to didn't know what I was writing for. Why I, in Wheaton, should be writing asking for an appropriation for Champaign.

Mr. Stipes: Mr. Stoll's suggestion is a very good one. He found out that those letters did a lot of good. If each member will take it upon himself to write his representative from his district, you will find that the representative will consider the letter, and, as Mr. Stoll suggested, it will be a good thing if you remind them of the importance of the clay industry. I know that we took down there very talented speakers who knew all those facts and presented them to the Committee. The Committee was very much astonished when the "Clay Eaters" as they called us down there, presented the facts. They were greatly surprised. I think that is a very good plan and the Committee should work out that plan and send those statistics to each of the members. It will be an excellent thing.

Professor Rolfe: I think, maybe, it might be worth while to tell a little incident that occurred while we were trying to get out last bill. The bill was introduced. And nobody said anything against it. A great many members of the Legislature told us that they were favorable to us, and everything seemed to be perfectly smooth sailing. The bill was made part of the Governor's bill—made one clause of the Governor's bill—and nobody seemed to have any objection. But along toward the end of the session, as you remember, the members of the Legislature, or some of them, thought it was necessary to punish the Governor for something that he did and so they went after the Governor's bill and in looking down the list they saw this item for a ceramic school and one of them said, "We didn't know anything about what a ceramic school was for and we thought we might as well hit him there as anywhere else." They cut out the appropriation absolutely. This was only a few days before the adjournment of the Legislature. We got the notice Thursday night and Friday letters began to go all over the state. That explains some of the letters. Letters began to go out over the state asking the people who were engaged in the manufacture of clay products to see the members of the Legislature and tell them that this was the thing that they wanted and to help them get it. I went down there Tuesday morning and was there every day. I went to three or four of the gentlemen with whom I happened to be acquainted, but before I could begin to talk with them, they said, "We found a stack of letters when we got home; yes, we know all about it and we are going to put it back." I won't give any names, but I got that reception from a good many prominent men in the Senate and the House. Finally, one of the leaders came around and said, "We are going to put that back, but we have got to 'save our face' some. We can't put it all back. Suppose we give you your working money and half your building?" I said: "We don't want it." He said: "Why not?" I answered, "Because we cannot use half a building." "Well," he told me, "you have gone on the principle that all these other people who ask appropriations have gone on, you have asked for two or three times what you need." I said, "No, we have asked for just what we need and we cannot put up the building for any less money than what we have asked for. Half of that appropriation would not amount to anything. If you are going to give us anything, give us what we have asked; if you are not going to give us what we need don't give us anything for the building." And they did not. They cut out the building entirely. My object now is to explain why those letters came to them and show you the necessity of very prompt action when letters are sent. Emergencies arise frequently and emergencies that can only be met by the most vigorous action.

The President: The Secretary will give the names of the Committee on Legislation.

Secretary Hartwell: The Committee is, F. W. Butterworth, Chairman, William Hammerschmidt, W. D. Gates, John W. Stipes, D. P. Purington and Dr. A. L. Converse.

Mr. Stoll: I don't want to make a motion, but I will suggest that possibly the Secretary has access to some papers or books or statistics which he can get to make up a little pamphlet and have a few of those printed and sent to the members in the different parts of the state so that they can use them in writing to their Legislators and their Senators.

The President: I think, Mr. Stoll, it would be better to have them in readiness—it would not be well to send them out too soon. It would be better to ask each member to send it with a letter to the representative from his district. Have them ready to send out when you want them. You don't want them sent too early.

Secretary Hartwell: I am quite sure there are no papers that would give that data, but I think Prof. Rolfe and I could get together and compile what we want.

Mr. Stoll: I move that the Secretary get statistics showing the value of the clay industries of the State of Illinois and of the need of such an appropriation as they may desire, giving statistics as to the number of manufacturers and the number of men engaged in that work. That the Secretary have that data in printed form and have a sufficient number printed and ready for distribution when needed.

Mr. J. M. Mamer: I second the motion.

The President put the motion and it was carried unanimously.

Mr. J. M. Mamer: The Professor brought out some points in his paper that are certainly very good. Especially in regard to the burning of pyromatic cones. I wish to say that we have used the cones for about six years and while they cost only a penny a piece we use eight in each kiln and the cost of the cone and freight makes them practically ten cents a kiln. If those cones cost 25 cents a kiln, I would not think of doing without them. I do not think that anybody who has begun to use them would think of doing without them.

President Hammerschmidt: The next paper is by Mr. Charles W. Lansing, of Chicago, entitled "The Cement Craze." We will have to postpone this until Wednesday afternoon on account of the lantern slides. The next on the program is "Comparative Ideas on the Burning of Clay Wares," by John C. Boss, Elkhart, Ind. We will hear from him.

COMPARATIVE IDEAS ON THE BURNING OF CLAY WARES*

Mr. President and Members of the Illinois Clay Manufacturers' Association:

I first want to congratulate you and the officers on having, as I understand, the oldest association in the land. I think that is quite an honor and speaks well for your "stick-to-ativeness" qualities. I was requested to prepare and read to you a paper on "Comparative Ideas on the Burning of Clay Wares." The Good Book tells us, "Of the abundance of the heart the mouth speaketh." I trust I will not tire you.

This is an age when men in every avenue of business activity are seeking in the most impartial manner after new improved methods and ways of doing things which will not only shorten the process of manufacture, not only reduce the cost, but better the product as well.

The fact that brick-makers have always adopted and made use of the various improvements which were invented and applied in the art of manufacturing brick which would bring out the foregoing, simplified, cheapening methods, has placed them in the foremost ranks as business men, and under the circumstances, being conscious of this fact, I therefore keenly feel the responsibility of coming into your midst to dare to present to such a body of men ideas on brick burning, and it was only at the most urgent solicitation on the part of your executive committee and Secretary, that I finally consented to prepare a few ideas on the subject matter and present them to you for consideration.

If you will bear with me, I would like first to present to you a few fundamental principles which bear on the value of brick as a building material. Brick-makers have learned to make brick well; they are able to make use of every imaginable kind of clay and make first-class good brick of it, but it sometimes seems to me the very men who understand the skillful art of manufacturing brick, do not possess a knowledge of the thorough worth and value of their product, after it is manufactured.

What I desire to convey is the absurdity of the claims of nine-tenths of the building public, that the foundation of a building must, of necessity, be made of concrete or rock, or material of this nature. The public seems to have an idea that this material represents a factor of carrying heavy loads without giving way, or weakening the foundation of the building, and no more gigantic mistake was ever made on the part of any builder when this idea is adhered to.

Brick contains a positive, non-destructive, purifying, cleansing factor. This purifying factor is entirely absent in any other material of whatever character or kind you may employ, and I have witnessed innumerable instances when prospective builders learned of the art and the principles involved, that they were much gratified and expressed their appreciation in the highest measure.

Take for example two buildings; the basement, or foundation, of one is made of concrete or stone, the other is built of the old reliable, and only building material, *brick*. It will not be long after the two buildings are completed you will find the basement in the building made of concrete or stone, the air will be damp, musty and impure, and the tendency of this impure air is to penetrate every nook and corner of the building, for its action is upward, consequently, in the extreme, detrimental to good health. On careful inspection you will find on the other hand, the air conditions in the basement of brick are entirely reversed and different results forever follow. This air in the brick basement will be sweet, clean and pure.

This same cleansing and purifying quality naturally asserts itself throughout the entire building and one need not wonder at this phenomenon for the reason that God, by direct intent, so constituted and formed the ingredients of clay that, when manufactured into brick and properly burned, they will contain these inherent and valuable qualities. This not only establishes a principle after which brick-makers are seeking, but it gives the brick-maker proper credit for his ware, and hence increased sales.

Therefore, concrete, cement, or stone for building walls of any description, in any kind of building in which pure air is essential, is purely an absurdity.

Now as to the principle of properly burning these brick, I assume naturally interests every brick-maker who manifests sufficient interest to come here to participate in the deliberations of this Association. I have been requested to write and present a paper on the art of burning clay wares, using air under pressure.

Before we proceed further, permit me to make the statement that the burning of good brick does not happen by chance, but to the contrary it is merely following out an inherent, natural law, and when this God-given law is adhered to, it will always result in order, harmony and a perfect product.

Brick-makers in the early period of this invention, could not conceive why it should make any difference whether air was used under pressure or whether free air was used, which would be natural draft. Allow me to present the reason, or argument, in favor of using air under pressure.

There is not a brick-maker in my hearing who will not have to concede that a green brick kiln to which is applied the old style fires, utterly lacks the power and ability to produce the proper kind of fire with which to execute and set in active motion the water-smoking process, which the brick are in need of at this stage, and it is impossible, under the most favorable circumstances, to produce a water-smoking fire that is penetrating and keen, until the kiln is nearly water-smoked and begins to assume form and raise the heat. Even then, the fire conditions are of a lax and dilatory nature and character. In other words, a green brick kiln is not in need of fire to drive off, or liberate, the dampness or water-smoke in the kiln, but to the contrary it is in need of an abundant supply of dry, superheated air. When using air under pressure, immediately when fire is started in your kiln it is at once sharp, clean, keen and penetrating, and the smallest minute fire can be maintained, which will be equally sharp and penetrating, and to your surprise you will find that the finer the coal and the more it assumes the form and shape of slack, the better is it fitted to produce a good, water-smoking fire.

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Your state and the territory contiguous bears an enviable reputation for producing high class pressed brick, which in all instances are very tender and easily damaged in the water-smoking period. The fire produced with air under pressure is most admirably adapted for the water-smoking of this sensitive product.

As before stated, a brick kiln in the early stages while it is being water-smoked, is not so much in need of fire as it is in need of dry, superheated air.

Consequently, with this system, we so arrange to secure an adequate fire as to size and intensity to produce a given amount of heat and then allow free air from the outside to mix with and temper this heat, which provides an effective water-smoking condition. You will find that a brick-kiln can be effectively water-smoked by this application in from twelve to twenty-four hours less time than you can the old way.

Immediately when the water-smoking process is completed, your brick-kiln is then not in need of superheated air, but a fire application is necessary; the free air from the outside is cut off, all the fire-doors being kept entirely closed, the kiln made air-tight so far as free air from the outside is concerned, and air under pressure only is, from now on to its completion, employed. In this manner, the elements have absolutely no control over, or effect on, your brick kiln whatsoever. The wind may blow a heavy gale continuously from start to finish against one side of your brick kiln and no possible disturbance takes place on the inside.

This brings us to the real principle of burning brick. Few brick-makers have the proper conception of why it is possible at all to burn brick, and I shall attempt to make this as plain as possible in the following language:

Brick, or rather clay in brick form, contains a capillary attraction, and were it not for this capillary attraction it would not be possible to burn brick. This capillary attraction is very keen and quick. The first brick attacked will become filled with heat and will, in turn, convey the heat to the next one adjoining, and so on until the heat has circulated through the entire mass of brick to be burned. So much for the capillary attraction of brick.

The following paragraphs which I will start to read to you embrace an idea which I have always contended: That brick makers do not know sufficient about what I term the heat wave principle in burning brick, and I would like to have you bear with me a while and as I go over these paragraphs follow my idea. I would like to have you not just condemn the idea and cast it to one side and say, "that man is just a common country brick maker and doesn't know what he is talking about." That may be true. I am only a common brick maker and running a brick yard up in Elkhart, Indiana. I want to have you study this plan. I will make it as plain as I can.

Now as to the heat conditions in a brick kiln, and why the heat should not be distributed, or why the heat should be forced to travel in an unbroken wave until the entire kiln is burned. When a brick kiln under fire passes the red heat period, a wave of white heat is established in your kiln. This wave of heat is the all-important factor. This is the avenue through which the brick obtains its color, its power of endurance, its solidity, its very life-giving quality, and when this wave of heat is once dissipated, as in a large per cent is, by the very nature of itself, done by the old process, it is never again possible to re-establish this same wave of heat on the original basis so that it will contain such power of execution and produce such a wonderful brick burning effect as if the first original heat wave were maintained without its being disturbed.

The man in charge of a brick kiln makes a failure; the proprietor is displeased, and a very urgent request, on the part of the man in charge, is made for better fuel. Poor fuel is blamed for the poor burn when, as a matter of fact the fuel had absolutely nothing to do with the problem whatever. It was this heat wave principle, and this heat wave, important as it is, is little understood by brick burners. This heat wave, when properly conducted throughout the kiln, is conveyed from one layer of brick to the next, under a very heavy pressure. Consequently it is necessary that the brick kiln be not too wide so that the brick burner possess the power and ability to control and carry this heat wave in an unbroken chain from its inception, or beginning, until the completion of the burn.

This heat wave is, for the most part, mysterious in its origin, mysterious in its action, and mysterious as to the manner in which it executes its work. It is usually not to exceed three inches thick and considerable ingenuity is required to compel it to travel on an even basis throughout the kiln to completion. It is only within the body of the heat wave that the actual brick burning effect takes place, and the greatest intensity of the heat lies directly in the center of this heat wave zone. The brick burning heat is not so intense below the heat wave in an up-draft kiln, and above the heat wave in a down-draft kiln. Beyond the common annealing process which, for the most part, takes place near and after the close of the burning, there is no chemical or fire change of any consequence takes place within the brick after this heat wave has passed through it.

This brings us directly in contact with another principle which, for convenience sake, we will call a heat-producing principle. Few brick burners understand this principle, why it is possible to raise heat in a brick kiln and here we come in direct contact again with this heat wave. By far the greatest per cent of heat that is produced within the kiln is not had from the fuel which is consumed, but to the contrary comes from a God-given quality which the clay contains, which can only be brought out and developed through the instrumentality of this heat wave.

Singular as it may seem, but the inherent qualities in clay do not begin to produce heat or burn themselves out until this heat wave phenomenon strikes the brick. Then a peculiar, chemical, heat-producing change takes place.

The heat wave is traveling through the kiln, fed, nursed, governed and balanced from an artificial source, and as this heat wave attacks the unburned clay, an additional quantity of brick burning heat intensity is produced. If this heat wave is forced to travel through the brick kiln in an unbroken chain, very little fire is required to maintain it, but if, for any reason, this heat wave is dissipated, and permitted to become disturbed, it will not only be at the peril and loss of an otherwise first-class good kiln of brick, but it will involve the impossibility of burning this same brick kiln so good and with so little fuel as though the heat wave had been maintained in its natural form, and if the kiln is burned at all, the process will be entirely mechanical and at an enormous additional fuel cost because of the fact that the only burning element then had access to is through artificial avenues, and the brick in a kiln thus completed will not contain the luster, life, resiliency and power of endurance as when the heat wave had been maintained throughout the entire process of burning.

After explaining this heat wave condition, it must be plain to you that a brick kiln that is being fed from natural draft sources, by means of which the air enters into the kiln from the outside and exposes the kiln to the elements and wind conditions, that the amount of air entering into the kiln is never constant and always changing, and that on one side or the other of the kiln the air is entering in such a manner as to tend to disturb this heat wave; whereas, with the system using air under pressure, this disturbance is entirely eliminated by means of which the air is furnished to the kiln in a known quantity, always constant and never interrupted.

The side where the wind is not blowing is getting the same amount of air, or oxygen, as the side of the kiln against which the wind is blowing.

This all-important heat wave carries with it another powerful factor which, on account of a lack of proper knowledge of its action, brick-makers seldom know, or realize, why the brick in the bottom of an up-draft kiln become overburned and ruined before the top is properly burned. To illustrate:

We will assume that the heat wave is properly maintained and carried through the kiln in an uninterrupted manner until it reaches the top. It is never necessary to injure or ruin the bottom part of a kiln in order to accomplish a successful burn clear to the top. The protection of the bottom of the kiln does not come merely by chance, but is due to an inherent quality which all clays possess, that when the bottom brick are properly burned, they will acquire, or assume, no destructive change as a means of carrying the brick burning heat to the top of the kiln.

I firmly contend that it is not necessary to overburn and ruin the bottom in order to burn the brick in the top of the kiln, and I further contend that the only time destruction in a brick kiln takes place is in a brick kiln where the heat wave has been dissipated and lost; and when brick are ruined in the bottom of a kiln, it is accomplished, not by the natural brick burning elements, but by the unnatural.

Many of the gentlemen of this Association, being interested in the burning of high class fire brick, it may not be out of place to have a word as to the application of this heat wave principle and how it applies in the burning of fire brick.

You are all aware of the additional heat intensity necessary for the burning of fire brick over that of the common ware, and by far the greatest enemy that a fire brick kiln has, is the lack of proper control of this heat wave, for the reason that the inherent, heat-producing element in fire clay is present only to a very small degree, and when it is burning out, it must be nursed so carefully and the heat wave under no circumstances allowed to become dissipated.

It will therefore be plain to you that when you have access to a positive means of producing heat which, at no period, is dependent on outside local conditions, and which, at the brick burner's command, will produce for your brick kiln any quantity and intensity of heat that the kiln requires, under positive governing power to maintain the heat wave, that a kiln thus equipped will not only burn your ware better, but for half the fuel cost; and the fire brick thus burned will, as in the common ware, possess a greater degree of tenacity and power of endurance.

Twenty years or more ago whitewash or the white sediment that appeared on so many brick walls and buildings was, by nearly all brick makers and architects, thought to come from some inherent chemical or climatic condition, and I remember distinctly that years ago large sums of money were offered to anyone who would invent some way or application whereby this whitewash could be excluded or prevented on brick walls. From personal contact had with first-class brick men and architects it is plainly evident that the public at large does not yet fully understand the real fundamental reason why the whitewash appears on brick and how it can be permanently prevented.

There are two distinct sources from which this whitewash or effervescence, is had and strange to say the effect in each instance is almost identical. The first factor of trouble is occasioned by too hasty water-smoking in the early stages. Brick, however, that are ruined from the source as indicated, will show the whitewash and discoloration immediately before they are laid in the wall, in fact before they are taken from the kiln, but there is a second feature of this discoloration almost identical in appearance and action as the first, but is derived from an entirely different source, and I have known the most beautiful terra cotta and brick walls absolutely ruined by the last effect, which is hereby described:

To illustrate: We will assume that the brick or clay ware was properly water-smoked and the heat production in the early firing of the kiln was perfect, yet it is possible to take this material out of the kiln, place it into a wall and, at certain seasons of the year, it will show this discoloration or whitewash effect, and when, from this latter cause the discoloration will appear and disappear periodically, I am firmly convinced that this latter effect is had from the material not being burned as hard as it should be; the material may be burned hard enough to withstand the elements, never give way from thawing and freezing, but after careful inspection and investigation I am firmly convinced that the most elaborate brick walls that were ever made in the world were ruined by being under-burned, and had this same material been burned harder, this discoloration would never appear; and as a matter of proof, careful inspection of walls that are troubled with the whitewash will show conclusively that 95 per cent of the trouble comes from under-burned brick, whereas the walls that are permanently covered or discolored are made so by the original water-smoke dampness being scalded and burned permanently into the clay ware, so that, in the end, it is a very simple process for brick makers to overcome this troublesome difficulty.

Just a word as to the application; that is, a little description as to fire-box conditions. You will, of course, understand that this same principle of air under pressure applies to down-draft kilns of all description as well as up-draft kilns. In applying this system of air under pressure to down-draft kilns, a kiln thus equipped will last an immeasurably longer period of time without any repairs necessary than by the old way, for the following reasons:

With the old way of burning, a brick-kiln is constantly troubled with clinkers. The slag will form and melt on the side of the fire-boxes and in the bag walls, whereas, with this system we do not have any clinkers, at least not sufficient to cause the usual wear and tear that is occasioned the old way. Fire-boxes are never destroyed or ruined by the actual process of producing heat necessary to burn the ware, but to the contrary the great damage is done by reason of the abrasions which take place through the clinkers melting to the fire-boxes and in removing them the fire-boxes are gradually worn away until repairs are made necessary, and with the old process, after the brick-kilns have been in use for a year or two, fire-boxes are in almost constant need of repairs.

Another feature is that with the old way of burning the fire at times clogs up almost entirely, not admitting sufficient oxygen to permit of the carrying of the heat from the fire-box to the kiln, and when these conditions occur, the heat is held in and around the fire-boxes and bag walls until they are absolutely ruined and destroyed.

With air under pressure there is a constant given flow of oxygen entering into the fire-boxes and brick kilns, thus making it absolutely impossible for the heat to congregate and hang in and around the fire-boxes, with the result that injury from this source is not possible. (Applause.)

The President: The gentlemen will agree with me that that has been a very excellent paper. If anyone wishes to ask any questions Mr. Boss will answer them.

Mr. Carter: I would like to ask Mr. Boss whether in a system of burning with forced draft it would be practicable, in round draft kilns of 30 feet in diameter, to use slack coal and get a heat of, say, 2,600 degrees F. Whether you could use with such a system a low grade of coal and obtain by the use of a forced draft a continuous high heat such as would be necessary to burn high grade fire brick?

Mr. Boss: That would bring us back to the original idea. You, of course, would refer to the fire clay ware?

Mr. Carter: Yes; I refer entirely to that.

Mr. Boss: To answer your question directly, it embraces the first heat-wave principle that I referred to. The quality of the coal is not essential, but the higher the intensity of heat required, the more closely will the firing process take place, and the quality of the coal, as stated in the paper, cuts no figure at all and coal slack of the poorest grades and quality can be used to produce any degree of heat necessary. The only thing is that with the high degree of heat it would be necessary to follow that wave closely and not let it get ahead of the process. The two conditions work together harmoniously. If you allow the heat wave to get too far away from you, then the heat production by the combination of the heat producing elements would not co-operate, so that the heat producing power is lost. So it will be plain to you that the quality of the coal cuts no figure.

If your kiln is narrow enough so that when you force that heat wave, as is necessary with fire brick and fire clay ware, the action of the fire and the wave of heat would act harmoniously, consequently the production of the heat would be in a God-given way harmonious, as it was intended.

Mr. Carter. A 30-foot round down-draft kiln—would it be possible in a kiln of that size to use air under pressure. with slack coal, and get a heat say of 2,600 degrees F. Would it be possible in a kiln of that size?

Mr. Boss: How many fire boxes?

Mr. Carter: Twelve.

Mr. Boss: It would be practicable, but a little dangerous. You might occasionally fall down. A kiln burning fire clay ware should not be that wide.

Mr. Carter: I find there is no difficulty in the present method by using good coal. I use nut size coal. But what I want to get is whether I could use a lower grade of coal, slack coal, and apply the forced draft in a kiln of that size. That is the reason I am troubling you by asking that question.

Mr. Boss: It is possible in a 30-foot kiln, although it would be better if the kiln were narrower and not so many boxes.

Mr. Matteson: My experience is that even brick that were thoroughly vitrified would show the efflorescence.

Mr. Boss: My experience proves to me conclusively that when brick are properly water-smoked, not too rapidly, and then vitrified, they will not show any efflorescence.

Mr. Roller: My experience is limited. Mr. Boss says that he has a little one-horse brick yard in a country town, and I can say the same thing for myself. But in regard to this efflorescence, my experience has taught me this: That it is not a question of how hard a brick is burned; it will come out in a softer burned brick in a sort of powder that will fall away. It will come out and show white on a brick, no matter how hard you burn it, but it won't show the powder. Simply the discoloration. I burned brick this fall rather late in a down draft kiln. There could not be any question about these bricks being hard because if you had any darker color you would have had to paint them, and they were as thoroughly vitrified as any brick could be. When the kiln was opened they were clear and there was no stain. But the kiln was warm. The air at that time was pretty cool and it was a little damp. We opened the door where they take the brick in kiln; made an opening in it and also the fire boxes, knocking the centers down. When that kiln was cool, in every place where there was an opening the brick around those openings for quite a little distance was just covered with this white coating. The rest of the brick were clear, as they were before.

The President: I think Mr. Boss made that claim in his paper. There are two kinds.

Mr. Roller: There are two kinds of stains. In one the brick may be clear but the alkali comes out of the brick on the application of moisture and heat. Then there is a stain from water-smoking. But these brick had no stain on them, but they all turned that white color. On a softer brick the powder formation will cover them. I would like to have the Professor's ideas on the whitewash proposition. I believe he can tell something about this that is interesting.

Professor Rolfe: Gentlemen, I am not a ceramist. I know one or two little things about the subject, but I do not pose as a ceramist at all. If any members want to know what we know about the matter of efflorescence, whitewashing, and so forth, and will send me a letter asking for our Bulletin, I will send it to them.

You all know that there are two kinds of white wash. There is the kiln white and the white wash that comes after the brick have been taken from the kiln. Kiln white comes from too rapid drying in beginning before the water has been driven off. It is generally recognized that the white wash that comes on the bricks after they have been taken from the kiln is caused by the production of soluble salts in the body of the brick during burning, and when the brick is exposed to the air and absorbs moisture this salt is dissolved and works from the interior of the brick to the surface. Sometimes it is carbonate of lime; sometimes it is carbonate of magnesia; sometimes sulphate of lime; sometimes common salt, and quite a variety of other substances. No one can tell from a mere statement, such as has been made here, which one of these salts has produced the white wash, but it becomes a simple matter to find out which one it is if one has an opportunity to examine the product. As white wash is always caused by the formation of soluble salts in the interior of the brick, if these brick are vitrified through and through so that there can be no absorption of water, these soluble salts cannot be dissolved and cannot appear on the surface. If white wash ever appears on the surface of a vitrified brick, it is entirely due to the environment in which the brick is placed. The composition of the brick itself can have absolutely nothing to do with it.

In the case which has been mentioned here, in which it is said that the white wash appeared on otherwise clean brick as soon as openings were made to let in the air to cool off the brick, it is probable that the cause of the white wash was the combination of the lime on the surface of the brick with the sulphur and the kiln gases and the moisture in the air. The sulphur and the kiln gases could not unite with the lime in the absence of moisture, but as soon as moist air was let into the kiln, the union took place and the white powder formed. But, however, when this powder is washed off from the brick, it will never appear again.

Mr. Stoll: I think we are getting in pretty deep water. I was on the streets of a Kansas town a few years ago; I saw some vitrified brick and there was the efflorescence coming through those brick and you could see it like frost on the street. The street cleaners would wash that off. I believe that if any professor could tell what caused that and would find a remedy he could wear diamonds as big as his thumb all over him. (Laughter.)

Mr. J. M. Mamer: Regarding what Mr. Stoll has just said, in the first building put up in our town we pulverized our clay and screened it so that we made a very good brick, although it was not a vitrified brick. This building was up about a year and a half and we got a rain from the northeast which practically hit two sides of the building. This lasted, I think, two days. About a week after this rain, there was a white wash came on that building, which beat anything that I saw. I saw a tile with spots half an inch thick. This white wash came on the northeast side where the rain had hit the building. On the other side of the building there was not any white wash. About two weeks after, we got another rain from the northeast. When that was over, there wasn't any white wash and there hasn't been any since.

Mr. Rolfe: If you will appoint Mr. Stoll the chairman of a committee, and give him a good committee to work with me, I will guarantee that he can have those diamonds within a year. (Laughter and applause.)

Mr. Boss: Another suggestion comes to me. At Elkhart, Indiana, in front of the Lake Shore Depot, there is paving brick and it transpires that about one-third of those bricks were soft. They were not vitrified, as they should have been. After every damp, wet spell of weather, you can go up there and pick out the softer brick and they are just covered or coated over with that white wash and white efflorescence, whereas the brick that are burned hard never have any sign of it. They are all the same brick, come from the same factory and same plant, but you never see any efflorescence on the brick that are burned hard enough and burned properly. It is only the soft ones that show it.

The President: On this question of Mr. Mamer, I think the cause of that was more in the lime in the clay, that got wet and came out.

Mr. J. M. Mamer: The building had been wet a good many times before but that never appeared until just that one particular rain. I don't know if there was some element that came down with that rain storm that brought that out. But it certainly looks that way.

Mr. Loy: I have learned one thing in this discussion. I never thought of it before. We know that brick are made from clay. We are told that man is made from clay. If a common salt whitewashes the brick, it must be the saltpeter that gives the man "the smile that won't rub off." (Laughter.)

Mr. Barr: The Professor has mentioned two kinds of white wash. We have three kinds. We have the kind that Mr. Boss speaks of as being scorched and burned on the brick, probably through water smoking. Then we have this that comes out in the rain, that Mr. Mamer speaks of, in the medium burned building brick. Then we have the third, that the other gentleman speaks of, in the kiln; that were burned as hard as glass, you might say. When you open the kiln, they are clean, and within fifteen minutes after the kiln is opened they will be covered with a sort of mold. Those are thre kinds we have.

The President: Will that mold stay on the bricks a long time?

Mr. Barr: No, it will not. Dip them in the water three or four times and it will go off.

The President: If you put that last kind in a street, will it show?

Mr. Barr: No. With the first rain that comes it is washed off. That is the third kind that comes on while the brick is still hot and thoroughly vitrified. You might put them in water for a week and nothing would appear.

Mr. Pratt: Mr. President, the subject has been touched on very thoroughly. As I said to the convention before, there are a great many times when you see a white wash come out on a building after the brick is laid in the wall. They will absorb a certain amount of water, coming through the mortar. I think that is because of the leaching of the lime that comes out during drying. They do that until the mortar becomes washed of all those soluble salts or alkalies, or whatever they are. In the opening of the kilns, we have nothing of that kind with us. I noticed an instance in my early experience in the making of building brick. We had about a thousand or fifteen hundred brick that were supposed to be ready that we put out in a yard because they were of inferior quality and often times our masons are not sufficiently careful in placing them in a wall to put them in the right place. There seems to be a right place for every brick, if we will put them there. I put those fifteen hundred bricks on the ground. In less than a year we got short on building brick. I went over to the 1,500 I had outside and we commenced to throw those bricks apart as we had to do some other work. But there seemed to be a mold or a frost that cemented those bricks together. There was nothing apparent on the outside. There was no discoloration on the outside. But there seemed to have been an internal decomposition that had brought out a salt that had practically cemented those bricks together. That was something that had crystallized, like salt would. It was a very peculiar thing to me and I made up my mind that if we left them there long enough, may be that would become a continuous process—perhaps there would become a union and dispense with the mortar.

Prof. C. W. Rolfe: I am going to take the risk of making a guess; and it is a guess, because I have never seen this thing that Mr. Barr speaks of. I suspect that the clay on which this efflorescence which Mr. Barr speaks of contains considerable lime; that the lime which is on the immediate surface of the brick is attacked by the kiln gases and by the moisture in the air, which is admitted. The sulphur and the lime would not unite without the moisture. But the moisture in the air permits the sulphur and the kiln gases to unite with the lime on the surface of the brick in producing this scum that will wash off. But the thing never will appear again on those brick, as has been said, because the brick are not porous and when they are taken away from the kiln gases, the conditions will never occur again. This is a guess. It is not very safe to make assertions until you know what you are talking about.

Mr. Barr: I want to say that the analysis of our shale shows that it has only a trace of lime. This is a very rare thing. I don't know that we ever had it in very warm weather. It comes in the late fall or winter, and generally with a kiln that has not had a very good draft.

Mr. Matteson: I want to say that in the kilns that we have noticed, generally when we take them out of the kiln, they are all right. Usually we have a thousand or two in a year. We have sent off samples that were perfect, but a week after they showed this efflorescence.

The President: You could pick it off with a pen knife.

Mr. Pratt: I would like to make a remark in regard to that. That will come out, and I have noticed it in the summer time when we have laid it over to one side and it then got wet, it will bring that little white wash out. Then I have seen other times—years ago I remember how they used to be making a red building brick and leaving the brick in the kiln during the winter and the snow would get into it, that it seemed to have a more marked effect from the water of the snow than it did otherwise.

The President: You are talking about your fire brick?

Mr. Pratt: No; that is true not only of the materials burned in the kiln but it also appears on the inside of the bag wall itself after you have shut the kiln off.

The President: I have noticed it in the case of fire brick.

Mr. Roller: It seems to be a fact that certain conditions bring it out. It has more effect on a soft than on a hard brick. You dip a brick in water; leave it there and it gets wet; put it on a hot radiator and dry it quickly and I venture to say that there is not one brick in a hundred but what will show that white. Another is, you have your kiln warm and in the winter when the air is damp, allow that cold, damp air to go against the hot air and it will show the same thing. The two conditions, while they are apparently opposite, will have the same effect.

The President: I want to ask Mr. Boss what pressure does he require to do that work?

Mr. Boss: We use what is known as an ounce pressure.

The President: You do it with a fan?

Mr. Boss: Yes.

The President: An ounce pressure made by a fan?

Mr. Boss: The pressure that is produced—it really is an ounce pressure, though we do not read it that way. We use a little U shaped glass tube, and this side (indicating) being connected with the main, as the pressure comes down on this side and raises it on the other, it makes enough difference in the pressure so that it makes a difference of an inch and three-fourths.

Mr. Pratt: I see that we have with us Mr. Knote, of the University, and we would like to hear a word from him on this subject. (Applause.)

Mr. J. M. Knote: I did not want to get into this unless I was called upon. In general we recognize three places in which the scumming which you talk about may take place. It has been known to take place in the dryer. It has also been known to take place in the water smoking period of burning. Then there are other places. No matter how carefully you dry them, or water smoke, they will come out with that scum. I think we have had all those classes mentioned here this afternoon.

Now, in some of these brick burning plants when they are burning, say, a nice red pressed brick, they will be a little bit careless about their dryer and not take the air out until it becomes supersaturated with moisture and the water may deposit on some of the brick which is just going in. Now, if you are drying by direct heat, or if you are drying by a waste system which allows some of the kiln gases to get into your air in passing into the dryer, and you do not take your air out until some of the moisture is condensed on the original brick, then you are likely to have this scumming, because then it is that your kiln gases contain more or less sulphur gases. They condense on the surface of the clay and being acid in character attack it and cause these white salts. Now, in cases of that kind, by straightening out the dryer it has been found that the process goes all right and the brick came out without scum. A case in point is the Hydraulic Brick Co. at Cleveland, if I remember it rightly. I did not see the case myself, but I was told about it.

Now, another thing which Mr. Boss brought out is the water smoking. If you water smoke and do not take the gases out until after the sulphur in the fuel is allowed to condense with the moisture on the lower course of brick, then the same action takes place as has taken place in the dryer. Now, if you can water smoke a little more briskly and keep more air going through and keep that water from condensing, then you may get rid of some of the scumming.

There is a third class of clays mentioned here which, no matter how careful you are with those operations, will scum any way. That is because there is a salt in the clay which comes to the surface, even with a brick which is burned as hard as all our shale paving brick are, the scum still remains. Now, it is possible to get rid of that scum in an experimental way by adding some barium carbonate. That principle is made use of, as probably several of you know, by some of the companies which make high class pressed brick on which they can get a fairly good price. Put a little barium carbonate in the clay. Soluble salt is made insoluble by that process and will not come to the surface. I venture to say that if I had a sample of this clay which the gentleman says scums, that on a few pieces—it would be too expensive to do it in ordinary production—we could get rid of that scumming. In general, that scumming is the result of soluble salts which come out to the surface in some part of the burning process. They may come out in the drying, or in water smoking, or they may get gathered due to the material which is already in the clay.

We know that the fire gas contains sulphur, and in cooling down a kiln if you allow the fire box to remain full of clinkers and that contains sulphur, that may have the effect of taking all your salt glaze off, if you are using it. We are in contact with sulphur in all of the clays. Some of you get scumming in drying, some in the burning, and some cooling the kiln down, unless they take precautions to get rid of it by cleaning out their fire boxes, and so forth. (Applause.)

Mr. Stoll: In using waste heat from the kiln, with the sulphur getting in there and combining with the moisture, would that produce this efflorescence? I would like to ask Mr. Matteson if they use waste heat in their factories? In one factory they use a steam dryer. Do you have that efflorescence come out on the brick from the steam dryer?

Mr. Matteson: I don't think that we have it at all in the chamber. There are only one or two cases a year. It is only certain kilns.

Mr. Stoll: You use waste heat in your kiln. When you use the waste heat do you have that efflorescence?

Mr. Matteson: No.

The President: The first question under the head of Discussions: "Does it pay to nest tile in a kiln?" Mr. Stoll said there were two gentlemen there who would say No, and quit the subject. That seemed to be the consensus of opinion of those present.

Mr. John Stipes: The Illinois Traction System had sent word that the badges of the members were as good as money on the cars and they could ride free.

The President: The next of the Discussions: "Is the demand for tile running to the larger sizes?"

Mr. Walter: I think, Mr. President, we are selling just about as many four-inch tiles as we ever did, but we are also selling larger tiles. There are more tiles up to 10 inch or 12 inch, but in a general way I sell as many small tiles as I ever did. I don't make any below 4's.

Mr. Powell: I think that Mr. Walter answered the question. He sold more small tiles than he ever sold before. We have sold more tile than we ever sold before, but we have sold a great many larger sizes also. The demand is for all sizes. Of course it is true that there are a great many drainage districts being completed and a great many districts being closed that call for large tiles.

The President: Secretary Hartwell, read the questions in the Question Box. The first one was: "When Illinois is fully tiled, where will our tile makers find their market?"

Mr. Loy: We have been making tile in this country for, I believe, about 60 years. That is, tile has been made in this country to some extent for 60 years—

The President: Not in this State?

Mr. Loy: I say in this country. I believe now that after 35 years of tile making here that tile making is in its infancy. I believe that this deep dredging scheme will spread to the Northwest and all over this country where it is possible to get a good pipe laid. And that when we get Illinois thoroughly tiled in the next hundred years, we will still have territory and opportunity to send our tile to our neighbor states.

Mr. J. M. Mamer: Mr. President, along that line reminds me of what I heard an Englishman say. I think they have been making drain tile in England for something like a hundred years, and they apparently are laying just as many to-day as they were 50 years ago. He said they were putting in drain tide at present there from 12 to 16 feet apart. I think we will continue laying tiles in this State until the same conditions prevail.

Mr. Charles H. Lansing: You might be interested to know that our good friends in Iowa are worrying more about that future market for tile than we seem to be up here. I agree with Mr. Loy that the tile industry is still in its infancy and that we have no cause for worry whatever on that score, but, nevertheless, it is a fact, that that subject is really a vital one in Iowa. I know that some of the leading drain tile manufacturers in Mason City are rather inclined to discourage increasing the industry, although the demand is good, although they have no trouble in selling their product, even considering their large capacity, yet they fear that the increasing number of tile makers will soon bring about a condition where the demand will lessen because the State will be more thoroughly drained and that they will find it impossible to run their factories to the full capacity. I think that that was partly the reason for quite a little bad feeling at the Iowa convention. The Mason City fellows are fighting might and main to discourage the building of new tile making plants, although they have no reason to complain of the present demand or the demand for the immediate future.

The President: My theory is this: That they have not commenced to drain yet in this country, anyhow; they have just commenced with the low places. When they get all the high ground drained, then they can go down low again and commence again. So I am not afraid but that there will be a demand.

The President: Some one put this in the Box: "What is the best metal to use in Babbitting our boxes?"

The Secretary: You answer the question.

The President: I don't know what you want to know about this Babbitt metal. For the benefit of all the members, and that of their machine boxes, I say, use graphite that I am using. I am sorry that I cannot give you the name of it. It is made of Babbitt and wire screen, and in that in every three-quarter inch there is small pieces of graphite pressed in it. It costs $1.50 a square foot. I never use any metal in my machine boxes but the best, that costs 23c or 24c. I have found that it was reducing the cost of filling the boxes. It will save you 75 per cent of the cost of oil. If your engineer forgets to oil it for a day or two, it won't make any difference. One box ran on a machine for three months, when I had occasion to open it on account of a collar breaking anr on the shaft there was not a wrinkle. It was as smooth as could be made. The shaft was not worn. It run nice and easy. And it never heated.

Mr. J. M. Mamer: Do I understand that this is Babbitt lining?

The President: It is not lining. You get it in strips. It is made up of a copper woven wire filled with graphite. It is in dots all over it.

Mr. J. M. Mamer: You put this in a round shaft and then put your Babbitt metal under it?

The President: Yes. Any one who is in trouble with any of his boxes, if he will get this stuff and try it, it will be one trouble less that he will have.

The Secretary: Mr. Charles A. Gould can explain about Babbitt metal.

Mr. Gould: I understand that that process you speak of is very expensive. I have been in the metal business about sixteen or seventeen years myself. I have seen cases where they proposed to put in that bearing but they complained that it would cost them too much. The idea that graphite will amalgamate with metal has been exploded a long time. The moment you heat the metal, the graphite rises to the surface and when you pour the box you get all the graphite on the outside of the bearings and not inside where the journal touches. Consequently you find only a trace of the graphite in the metal. I mean the ordinary Babbitt metal.

The President: It is impossible with this lubricant. The graphite is held in by this wire in place and the graphite dots are regular cat-a-corner all over the whole bearing. And the surface metal is around it.

Mr. Roller: Which side of this wire does the metal run on?

The President: Say, I want to fill a box three inches long. Say I cut a sheet out. I hold it in the box and put it in. The metal runs through the screening. You don't see any of the screening after it is filled. The copper wire is all covered in the metal and the graphite is up so as to be against the bearing.

Mr. Gould: It is not a metal.

The President: We use metal just the same. This graphite is compressed in butts, or like a bean.

Mr. Gould: What I mean is, it is not in the metal.

The President: No, we don't put it in the metal.

Mr. Gould: It will not amalgamate with metal.

The President: I only wanted to bring it up. I know that it is a great thing. Is there anything else, gentlemen, that you want to talk of now?

Mr. J. M. Mamer: I have a sample of a tile here which a gentleman brought me from Minnesota. I want to bring up its discussion here. It is a kind of a peculiar condition. I think that the condition is brought about by the lime in the clay. When that tile comes out from the kiln, this gentleman tells me that it is just as perfect as can be. It is sound and has a good ring. After it has been out a few weeks, a series of checks form on the outside. I will pass it around. It is not the fault of the burner. He says that he has a tile where it has been burned very hard where that condition does not come about afterward. It is only in the tile that is medium burned where that occurs. I would like to ask any member present if he has had anything like that.

The President: While you look at that piece of clay we can take up the one other question in the box: I don't know just what that means, but I think it means that our Secreary had no money last year and it means that all those who come in to the meeting should put up their little fee. This is the question that was in the box: "Does Secretary Hartwell have to walk home this year?" In the laughter that followed the query one of the members asked how far the walk would be, and the President continued: He pretty nearly had to walk home last year.

There being no further discussion, Mr. J. M. Mamer moved an adjournment to Wednesday, January 20th, 1909, at 8:30 A. M., which motion was carried and the President so announced the adjournment.

(Next session in next issue.)

CEMENT EARNINGS SHOW DULLNESS

American Cement Company's earnings last year reflected the depression all lines of business experienced. Net earnings fell off 44.3 per cent compared with the preceding fiscal period, and the gross business was 15 per cent less than in 1907. Nevertheless $9,287 was added to the surplus after paying regular dividends of $120,000, a 6 per cent rate.

The report showed cash on hand amounting to $84,343, which is a gain of $30,260 over the previous year, and is the largest amount shown by any statement the company has issued.

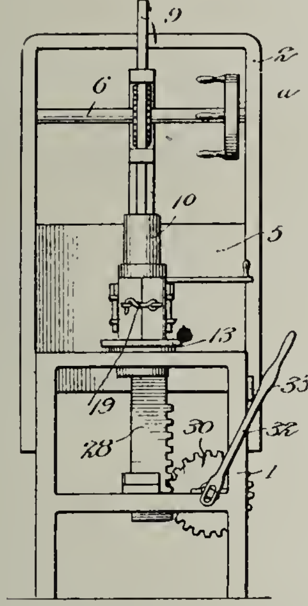
The inventory is only $13,332 less than for the previous year. Another good feature was the reduction of bills payable, which on Nov. 30, 1907, stood at $337,500 and on Nov. 30, 1908, at $229,316. Bills and accounts receivable were reduced from $420,590 on Nov. 30, 1907, to $294,974 on Nov. 30 last.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

905,646. Machine for Making Cement Drain-Tiles. John Cardiff, Potomac, Ill. Filed Apr. 24, 1908. Serial No. 429,065.

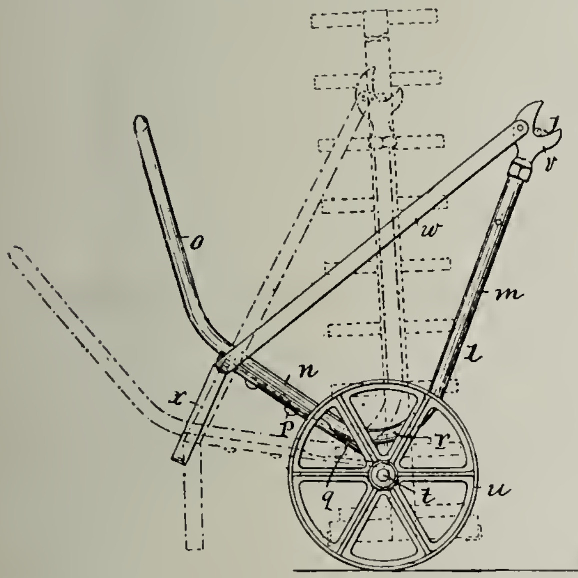
Claim—A tile machine comprising two pivoted members, a swinging hopper member, and a scraper or slicker pivoted to the hopper member, substantially as described.

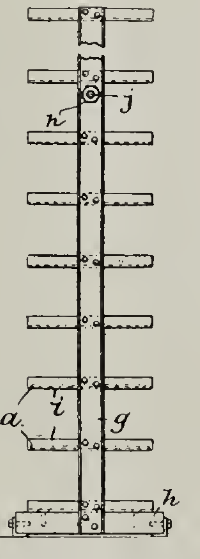


In a machine of the character described, a pair of molds pivoted to the frame, a hopper, a slicker pivoted to the hopper, a pallet board having an aperture therein, a plunger, a core, and means for operating said plunger and core.

907,923. Brick-Truck. Hiram H. Walsh, Newburgh, N. Y. Filed Oct. 3, 1908. Serial No. 456,042.

Claim—In a truck, the combination of a frame consisting of a U-shaped member, wheels, said member having its end-portions upturned and forming the sustaining part of the frame, and elastic straps projecting from said member where its end-portions are upturned and forming means for revolubly attaching the wheels to the frame, substantially as described.

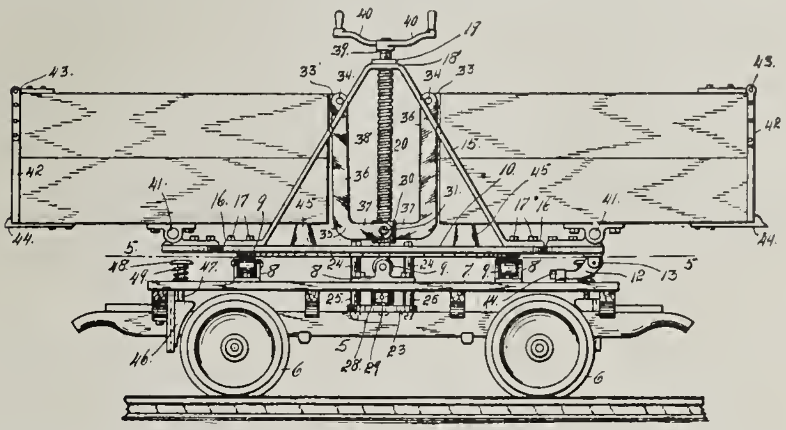




In a truck, the combination in a frame consisting of a U-shaped member, wheels, means for revolubly attaching the wheels to the frame, said member having its end-portions upturned and forming the sustaining part of the frame, and its intermediate portion forming a handle, and a bracing strap having its intermediate part formed V-shaped and serving as a rest, said strap connecting the handle and upturned portions of the frame, substantially as described.

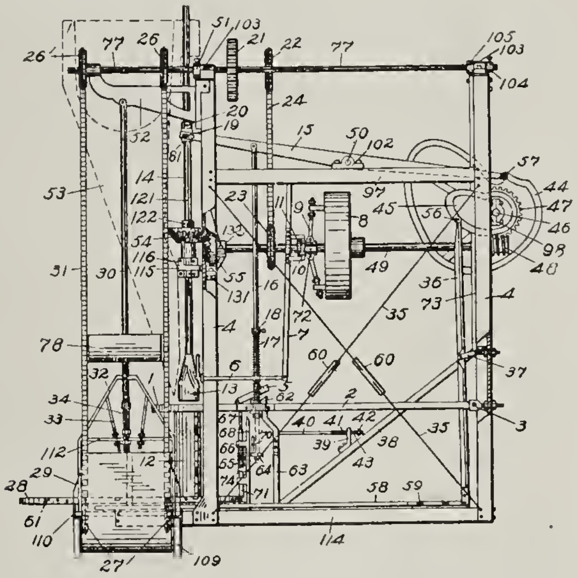
908,435. Dumping Push-Car. George C. Wortman, Wortman, Colo. Filed Aug. 16, 1907. Serial No. 388,757.

Claim—In a push car, the combination with a platform, of a car body tiltably mounted thereon, a vertically disposed screw shaft suitably journaled, a nut mounted on the screw shaft, and a link connection between the nut and the car body, said connection being located above the platform, whereby as the shaft is rotated to cause the nut to travel thereon, the car body is actuated, substantially as described.



The combination with the framework of a car, of a car body tiltably mounted thereon, upright supports mounted on the framework, a transverse bar connecting these supports, a screw shaft journaled in the said bar, a nut mounted on the said shaft, and a link connected at one extremity with the nut and at the other extremity with the car body above the bottom of the latter, substantially as described.

908,611. Tile-Machine. John M. Schenk and John H. Stewart, Waterloo, Iowa, assignors to The Cement Tile Machinery Company, Waterloo, Iowa. Filed Aug. 19, 1907. Serial No. 389,171.



Claim—In a tile machine, in combination, a mold, means for transporting said mold to a different location, a hinged element adapted to engage the top of the mold, means for raising and lowering said hinged element, slide-rods connected to said means having engaging-means on their lower ends under said element adapted to contact with and lift said element when raised to a certain distance, and resilient means connected with said rods and bearing against the top of said element and adapted to resiliently said element upon said mold when in its lowermost position.

ADOPT CLAY MODELING

At the opening of the second semester of the Cherokee county high school, Columbus, Kansas, a course of clay modeling is added to the school's curriculum. This course will take up one year and will consist of modeling small animal forms, heads and faces.

CLAY RECORD.

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GEORGE H. HARTWELL, Editor

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

CONVENTIONS

The Ninth Annual Convention of the Wisconsin Clay Manufacturers' Association will be held at Milwaukee, Wis., February 10, 11 and 12th. Headquarters at St. Charles Hotel.

The Eleventh Annual Convention of the American Ceramic Society will be held at Rochester, N. Y., Feb. 1st, 2nd and 3rd, 1909.

The Fourth Annual Convention of the National Paving Brick Manufacturers' Association will be held at Rochester, N. Y., Feb. 1st and 2nd, 1909.

The Twenty-Third Annual meeting of the National Brick Manufacturers' Association will be held at Rochester, N. Y., Feb. 1st to 6th, 1909. Headquarters at Seneca Hotel.

Subscribe for the Clay Record today.

Do not get it into your head that this is anything else but the "Clay Age."

You are just as apt to underrate your competitor as you are to overrate yourself.

Man is the only aniaml that can talk and the only one that wastes speech telling about himself.

On preparing advertising copy, don't use big words. The grandest announcements that were ever made were spoken in the simplest language.

"Trade is so poor that I can't afford to advertise," and "Trade is so good just now that I don't need to advertise" are equally fallacious arguments. Advertising would rectify the first and make permanent the second condition.

One stroke while the iron is hot is worth twenty a few minutes either before or after. Advertise in season. The Clay Record can give to you two issues when all other clay journals have one in these busy seasons. Think it over and see if this is an advantage.

BUILDING OUTLOOK IN WINNIPEG

It is stated that the architects of Winnipeg have prepared and in preparation plans for over $12,000,000 worth of buildings for 1909. With money becoming much easier than it has been for the past two years contractors are taking advantage of the low prices on materials and are placing tenders that justify a healthy outlook for the early spring.

The City of Winnipeg have awarded contracts to the amount of $1,014,700 on the general works for the municipal power plant. John Gunn & Sons, of Winnipeg, were the successful tenderers for the general works, the contract for the transmission line aluminum cable going to the Northern Aluminum Co., of Shawingan Falls, Que., while the contract for the steel towers was secured by the Manitoba Iron Works of Winnipeg. It will take at least three months for the contractors to get into readiness to go ahead with the work on the power plant. The local labor market is very much overcrowded, and in view of the fact that the building season will not open up for months yet, Winnipeg cannot offer the least inducement for labor men at present.

BRICK INDUSTRY IS A LEADER IN TULSA

The brick business is in an especially flourishing condition in Tulsa, Oklahoma, at the present time. The Tulsa Vitrified plant is running to its full capacity and only last week had to turn down orders for several million paving brick because of its inability to turn out the product as fast as the demand warrants. The capacity for making paving brick has recently been doubled and the entire plant is being enlarged right along. The capacity now is 40,000 brick per day. Seventy men are on the pay roll, and it is the biggest industrial institution in the city.

"Statehood certainly proved a great boom to the brick industry in the new state," said H. R. Cline, one of the stockholders. "Under former conditions brick could be shipped from southern Kansas to Oklahoma points cheaper than from interstate points. However the corporation commission equalized the rates and the result has been that we have been swamped with orders ever since. The brick industry is one industrial venture that can not be overdone as the demand for good brick is always ahead of the supply."

Besides the vitrified brick plant, Tulsa has three other plants manufacturing brick and they all tell the same story of more business than they can handle. The raw material is better here than anywhere else in the state, shipping facilities are first class and in fact the brick industry will some day be an immense thing for Tulsa.

OBITUARY

William B. Quigley, son of the late Stephen Quigley, for many years engaged in the brick business at Mobile, Alabama, died suddenly while sitting at his desk in his office. He was stricken with apoplexy.

John W. Graham, the pioneer brick manufacturer and veteran of the civil war, died very suddenly of pneumonia at his home in Rock Island, Ill., where he had resided since 1854. He was born in Pennsylvania in 1837. He leaves a wife and six children.

George M. Fieus, secretary of the Capital City Brick & Pipe Co., Omaha, Neb., died of appendicitis after a ten days' illness at Liscomb, Iowa, the home of his parents. He was 42 years of age, and is survived by a wife. They formerly lived at Des Moines, Ia.

ACCIDENTS, DAMAGES AND LOSSES

A. H. Curtis has sued the Thomas & Sons Pottery Co., East Liverpool, O., for $10,000 for the loss of a hand while working at a press.

A receiver has been appointed for The Indianapolis (Ind.) Composite Brick Co. R. H. Sullivan qualified for same. The company has an indebtedness of over $20,000.

By a cave-in of a brick kiln at the Purington Paving Brick Company's plant at Galesburg, Ill., Albert Lane of Knoxville was killed and August Rundquist seriously injured.

George Love of Butler, Pa., recently attempted suicide by crawling into a boiler of the plant of the Butler Brick & Tile Co. Employes prevented him from getting seriously burned.

Samuel Martin was caught in the shafting of the Fairmount (Ind.) Tile Works, and so badly injured that it is thought he will die. His left arm and both legs were broken in two places each.

An explosion of natural gas at the plant of the Tuna Valley Pressed Brick Co., at Lewis Run, Pa., wrecked the engine house, and started a fire which threatened the destruction of the plant.

Judge J. W. Mack has ordered Mrs. Anna Sexton, widow of the late Patrick J. Sexton, the wealthy Chicago brick manufacturer, to pay $170,000 to relatives to which Mr. Sexton instructed it should be paid in his will.

The Superior Brick Tile and Milling Co., Salt Lake City, Utah, is in the hands of a receiver. Peter E. Lamar, one of the directors caused the step to be taken. Carl C. Rasmussen was appointed by Judge Howell of the district court.

The heavy wind did damage to the plant of the Salt Lake Pressed Brick Co.'s plant at Salt Lake City, Utah. An immense ventilator on the top of the crane building was blown 150 feet away, and miraculously escaped hitting some of the employes.

HUDSON RIVER BRICK MARKET O. K.

A firm tone continues in the Hudson river brick market. Prices are essentially unchanged. Stormy weather lessened the week's demand, and the cold wave at the same time closed the upper Hudson. Navigation is entirely closed north of Rondout, and partially closed north of Newburgh. On fair days the demand throughout the metropolitan district is reported good.

LOUISIANA BRICK MAKERS' ANNUAL MEETING

At the annual meeting of the Louisiana Brickmakers' Association, held January 20 at New Orleans, La., R. A. Kent, of Fluker, La., was re-elected president. The meeting was the largest in point of attendance held in many years. Several important questions were discussed and taken under consideration. One of the chief subjects was bettering conditions during the coming year.

The session was held in the meeting-rooms of the St. Charles hotel. R. A. Kent, the president of the association for two terms, presided. Members from all parts of the state were in attendance. Interesting papers were read by R. A. Kent, C. N. Adams, of Alexandria; J. May, of McComb; Mr. Wright, of Alexandria; J. R. Abels, of Ponchatoula; Mr. Murdock, of Fluker; and Thomas Downey, of Hammond.

The deplorable condition of the trade during the last months of the past year was one of the matters which received considerable attention. There were many suggestions offered. It was the opinion of the majority that the conditions were the result of the financial troubles which affected every branch of the trade in all parts of the United States, and all are optimistic over the prospects for the coming year.

A feeling resolution was read on the death of Gus Godchaux, who was one of the most energetic members of the association. It was ordered that the resolution be spread on the minutes and a copy be sent to the family.

The report of Frank Bethune, the secretary-treasurer, showed affairs in splendid condition, especially the treasury, which showed a healthy balance in bank.

After all the reports the annual election was held. R. A. Kent, of Fluker was re-elected president. Other officers are Thomas Downey, of Baton Rouge, first vice-president; J. R. Abels, of Ponchatoula, second vice-president, and Frank Bethune, of New Orleans, secretary-treasurer.

President Kent delivered a neat address to the members, thanking each one for the trust placed in him, and expressed a hope that the administration for the year 1909 would be as satisfactory as in the past. He appealed to the association to stand together on all questions pertaining to the industry and fight until the conditions changed to the benefit of the manufacturer.

The president selected the following members to serve on the executive committee: J. R. Abels, of Ponchatoula; Thomas Downey, of Baton Rouge; H. E. Buck, of Lake Charles; C. N. Adams, of Alexandria; Ernest M. Loeb, of New Orleans, and Fritz Salmen, of Slidell.

The members adjourned to the banquet hall, where they enjoyed a delightful luncheon. After lunch a number journeyed through the French quarter.

The next quarterly meeting of the association will be held on Monday, Feb. 22.

NEW HEAD FOR AMERICAN SEWER PIPE CO.

F. N. Kondolf has tendered his resignation as president of the American Sewer Pipe Company, to take effect February 1, on which date George B. Hill, vice-president, will be made president. It is learned from the company that the demand for sewer pipe and clay products fell off considerably during the year 1908, but prospects for the year 1909 are very encouraging.

THE ADAMANT BRICK CO. AT BOULDER

The city of Boulder, Colo., has no more important industry in the building interests than the Adamant Brick Company that recently acquired the Boulder Shale Brick Association plant, and are now working on the construction of an additional kiln, that when completed early in the spring, will increase the capacity of the plant to 40,000 brick per day. This additional kiln that they are now constructing is known as the Haigh Continuous Kiln of which there are many of them in use in the largest plants in the east. The company's kiln here will contain thirty chambers. They manufacture the highest grade of red face brick and buff brick, and their products are not only largely consumed here and in Denver, but they enter largely into the constructive operations of the cities within a radius of several hundred miles of this city. The company will shortly install a Stanley perforated press, which will enable them to ship their products to any part of the country, as by this process of brick-making it reduces the weight and at the same time makes them stronger and harder. When the above installation is perfected they will begin the making of various products of fire clay.

The company occupies ten acres of ground with their kilns, buildings, clay beds and switch, the latter being 1665 feet long and connecting direct with the Colorado & Southern railroad.

Thirty expert brickmakers will be employed during their busiest season, which will be about April 1, 1909.

At the present time the company have a large and varied stock on hand and are in a position to handle orders for large or small contracts, and will gladly furnish estimates upon application for any character of building operation requiring the use of brick.

The plant is located on South Twenty-Fourth street.

The officers of the company are: Ralph M. Brann, president and treasurer; William T. Dumbleton, secretary and manager, and Ralph O. Hall is works foreman, all thoroughly familiar, by reason of experience, with the brick making industry.

MILLIONAIRE SLEEPS IN KILN

Denver, Colo., Jan. 21.—Edward A. Brown, a millionaire, cousin of W. C. Brown, president of the New York Central, admitted tonight that he had slept in a kiln with twenty homeless individuals to see for himself whether conditions did not demand the erection of a municipal lodging house as provided by the city charter.

"Every night when I went to bed I thought about the poor fellows who were said to be sleeping anywhere they could. Finally I dressed as a hobo, went down into the poorer section of the city and asked a fellow where he slept.

"He said in the kilns west of the city. That night I went out there and asked the night boss if there was any place to sleep. He opened the door of an oven. There were more than twenty lined up around inside. I lay down with the crowd, but I had to get up every few minutes, it was so warm, and go to the door for air.

"Finally we were all routed out about 4 in the morning because they had to use the kiln for brickmaking.

A HOT ANNUAL MEETING OF ATLANTIC TERRA COTTA CO

At the annual meeting of the Atlantic Terra Cotta Company, held in the New York office of the company January 21, William H. Powell, the vice-president, was elected president, in the place of De Forest Grant, who had held that position since the combine of the several terra cotta plants in this vicinity was formed.

The other officers elected were Samuel S. Whitehurst, second vice-president; George P. Putnam, treasurer; P. H. Hart, assistant treasurer and secretary. The directors elected were Edward J. Hall, John N. Partridge, William Manice and P. H. Hart The office of first viec-president was left open. P. H. Hart succeeds Dwight W. Taylor, who was one of the Grant faction. He and Madison Grant, another director, who was counsel for the company, were also retired. Joseph Winterbottom, Jr., is still chairman of the executive committee.

Mr. Powell, who has been elected president, was the owner of the Rocky Hill plant before the consolidation and has practically been in charge since the recent trouble developed.

It has been said that the Grant faction considers that the election was illegal and may contest it in the courts. An official of the company said that the new management was not worrying, as the election was legal. It is predicted that several changes will take place, one of which is the abolishing of the position of general superintendent, which was held by Norman Grant, brother of the former president. Charles U. Thrall has been acting as general superintendent since Mr. Grant resigned. Another change that is contemplated is that each plant shall have its own drawing office, instead of one central office as now. With the abolishing of the position of general superintendent, each plant will have a superintendent, who will be given more power.

The company is looking forward to a prosperous year. The drawings for a 14,000 ton order was received the 21st, for an educational building in Albany. This order is about as large as that for the Flatiron building in New York. The company has also received an order for the Long Beach hotel, Long Island. The order calls for 18,000 tons of terra cotta, which will keep the plants going for some time.

It is reported that Former President Grant has been subpoenaed to appear at the Federal building in New York in the case of the Government against the Atlantic Terra Cotta Company. This has been brought, it is understood, by a stockholder, to dissolve the combine, on the ground that the anti-trust law has been violated.

FIRE BRICK COMPANIES COMPLAIN TO THE RAILROAD COMMISSION

The Hayes Run Fire Brick Company and Pennsylvania Fire Brick Company, operating plants in Center county, near Harrisburg, Pa., have raised the question of joint rates before the State Railroad Commission. They claim that they have to pay fifty cents more per ton on shipments sent to Pennsylvania lines than plants located along the lines of the Pennsylvania. Their own plants are located along the New York Central.

HOW BRICKS MAY BE STAINED RED

The question has arisen concerning the proportion of copperas required in a stain for brickwork which is to be made of Venetian red, stale beer and copperas, the job being a large one in which is included old as well as new brick. Some have never used stale beer or ale in brick stain, but it is thought to be superior to glue water and alum as a binder. The copperas is introduced for the same purpose as is the alum in glue water—that is, as an astringent and drier and fixative or mordant. Green copperas (iron sulphate) is heated in an unglazed earthen pot until it falls into a dry white powder.

One should make up the stain by wetting up the Venetian red or whatever other mineral color you require to produce the right color, then add your stale beer or ale and to each gallon of the stain add at least four ounces of the calcined copperas, which first work into a smooth, creamy paste with a portion of the stain. On account of the difficulty of making the stain cover well on the old brick, you will have to use a strong Venetian red. Try your stain first on a few of the bricks before going ahead.

BRICK YARD TO REPLACE MANSION

Regarded as one of the most attractive estates in the suburban section of Philadelphia, Pa., the Cornelius property, near Frankford, has been sold to a syndicate which intends to convert a part of the ground into a brick yard. The property consists of a large Colonial residence and seventy-five acres of land, and is assessed at farm and suburban rates for $75,000. The purchase price was $150,000.

The syndicate that has bought the property is headed by Thomas Tansey and Louis Weber, of Frankford. Real Estate Broker George T. Dale negotiated the sale. The land is rich in deposits of a fine quality of clay.

Robert Cornelius, the former owner of the estate, was a well-known manufacturer of gas fixtures, and was deeply interested in horticulture and botany. He lived for many years in the mansion that has just been sold, and surrounded it with many fine and rare specimens of trees, plants and flowers, which he procured during his travels around the world. Ultimately the ground will be divided into building lots on which dwellings will be erected.

1909 BANNER YEAR IN BRICK INDUSTRY

General reports from the New Berlin, Ct., brick manufacturers are to the effect that prospects have brightened visibly in the last few weeks. There has been a more general inquiry of late in regard to prices and quotations are being made on many jobs. According to the statement of one of the local manufacturers the New York market is getting stronger in its demands every day and from the present rate of shipments he anticipates that all the yards in this vicinity will have cleared out their sheds before spring of the burned product.

There is still a large quantity of brick in Berlin belonging to the defunct Federal Brick Co., of Providence, which is also rapidly being disposed of.

Taking his cue from present indications, the veteran brickman predicted that the present year in the brick making industry will prove to be a banner one.

ANNUAL MEETING OF PURINGTON PAVING BRICK COMPANY

The Annual meeting of the Purington Paving Brick Company held January 21, resulted in the hearing of encouraging reports over the progress of business and prospects for the coming year. Among the statistics submitted most worthy of mention is the fact that during the year 1908 the thriving Galesburg concern shipped no less than 90,674,000 brick.

The officers chosen are appended:

Chairman of the Board—D. V. Purington, Chicago.
President—W. S. Purington.
Vice President and Sales Manager—F. G. Matteson.
Secretary—W. H. Terwilliger.
Treasurer—C. H. Chamberlain.
General Manager—W. G. D. Orr.
The last five officials are all of Galesburg.

NEW SPLIT ROCK BORING SHOWS FIRE CLAY DEPOSIT

A new test well is being sunk at Split Rock on the lands under option to the proposed La Salle, Ill. Vitrified and Fire Brick Company. This well will be No. 4, and is located on the north side of the east and west ravine, and between holes 2 and 3.

It has been decided to make a complete investigation of the fire clay deposit, getting samples and having burning tests made. Later developments as to the fire clay deposit at Split Rock show that it is even of much more value and importance than at first considered. The company has again been advised by another reputable and successful fire brick manufacturer that the deposit alone is worth $100,000 or more, so that if the new tests prove as satisfactory as expected, fire clay products as well as vitrified brick may be manufactured, and it will take only a short time to decide as to possibly changing a few plans for the plant.

EX-CONVICT SUES CHATTAHOOCHEE BRICK CO.

Roy Ragland, through his attorneys, Moore & Branch, filed suit recently against the Chattahoochee Brick Company, Atlanta, Ga., claiming damages for personal injuries in the sum of $3,000.

Ragland, in his petition, alleges that he was a convict, having been sent up for six years from Polk county. While working with cars on the day of February 5, 1907, he says both his legs were broken through carelessness of the foreman of the defendant company, who failed to set the brakes properly.

Ragland claims that his services had been secured illegally by the defendant company, their agent having purchased his services with money from the deputy warden of the state. This purchase was illegal, he claims, and hence the allegation that the defendant company is responsible for the injuries he sustained.

He says in his petition that he was laid up for two months on account of his injuries and that after he came out of the hospital and while still on crutches he was worked by the defendant company.

PACIFIC COAST NEWS ITEMS

Since the first of January there has been but a few clear days in San Francisco and vicinity, and the result is that there has been but very little construction work of any kind done. The gentle rains of the early part of the month have developed into the severest storm that the Coast has experienced in many years and from all sections comes news of flooded towns, interrupted railroad service and damage to property. In San Francisco this set-back is particularly lamentable at this time as it is desired by property owners in the down town district to rush work on their structures there, and have them ready for occupancy at the very earliest moment. Work has been suspended here only where absolutely necessary, and in many cases brickwork has gone on under temporary coverings. As soon as there is a change in weather conditions it is believed that building operations will be resumed on a larger scale than ever before in the city. At least, brick men are expecting that their product will be more in demand. The many temporary warehouses that were erected immediately after the fire are to be torn down and substantial brick structures put up in their place. Much of the work that is being planned for the early spring is heavy warehouse work and while this does not cut such a large figure in the totals of the building contracts as the construction of office buildings might, it means more for the brick men. A prominent architect of this city calls attention to the fact that there are fewer concrete structures for storage purposes now being erected than there were immediately after the fire. Excepting in the cases where a steel frame is used, these buildings have not come up to expectations, and tests that have been made in some of them would be very interesting, he declared, but to publish them would only result in an unnecessary scare. There are at the present time permits allowed for work in San Francisco upon which no start has been made, to the value of $3,223,201 and of this the sum of $1,594,535 is for structures of brick. This work has not been started on account of the weather conditions but contractors are looking around for material and brick dealers are just about as busy as they were during the busy season last fall.

Were it not for the fact that there is a heavy supply of common brick now at the yards of the various brick companies in San Francisco and vicinity, it is probable that there would be a brick famine when the demand sets in in earnest. The storm has been so heavy that operations are now impossible at many of the plants and even a dry spell will not place them in condition again for at least a month. Many of them have reached the conclusion that it will be practically impossible to work to advantage before next May and have accordingly closed their plants. Some of the plants in the Sacramento Valley have suffered considerable damage, owing to the flooded condition there. The city of Stockton is under water and fears are being expressed for the safety of Sacramento. Rio Vista is also flooded, and several small brick making plants are completely submerged but no damage of any consequence has been reported as yet by any of the large concerns operating in the central district of the state. No word has been heard as yet from Lincoln, where some large pottery plants are located, other than that the storm was very severe there.

C. F. Pratt, manager of the Golden Gate Brick Company, 660 Market street, states that his firm has a large number of contracts now on hand and that some heavy deliveries will be made during the next two months. The sandstone brick placed in the market by this concern has met with great favor here and large quantities of it are being used for fireplace construction in addition to facing work on buildings. The Southern Pacific Hospital, which is being erected near the Pan Handle in San Francisco, is now almost completed and is a greatly admired structure. Among the other buildings here which are being faced with this brick are the Keystone and Le Brun apartments, destined to be two of the most select establishments of their kind in the city. The common brick department of this concern has also been receiving a number of calls for material during the past month and some extensive shipments have been made to country points, this company making a specialty of keeping track of business in the interior of the state.

The San Francisco Brick Company and the Golden Gate Tile Company were not affected by the heavy rains, and both of their large plants are still in full operation. As many of the other concerns have been forced to close down, Manager George Gray believes that a ready market will be found for all the stock that can be turned out and the plants are being operated to their full capacity.

The Richmond Brick Company has just removed its local offices to permanent quarters in the Koshland Building, at the corner of California and Market streets.

The Popular Brick Company of this city has changed hands and from now on will be operated by H. D. Newhouse.

The Garvanza Brick Company, of Los Angeles, of which W. D. Osgood was the principal owner, has been sold to Hubbard & Chamberlain of that place and the transfer has already taken place.

The Tuscon Pressed Brick Company has been incorporated at Tuscon, Ariz.

The Valleyford Brick & Tile Company is the name of a new concern that has been incorporated to commence business at Valleyford, Wash. It is the intention to get a plant in operation by next summer.

The Oregon Art Tile Company has been incorporated at Portland, Ore.

The firm of Auld, Little & Auld of Spokane, Wash., has been succeeded by the firm of Little & Moller. This concern is an extensive distributor of tiling and especially the more fancy varieties.

The San Luis Obispo Brick Company has closed down its plant near San Luis Obispo, Cal., for the winter on account of the inclement weather. Several brick structures are projected for that place in the near future and the plant will probably open again about the first of April.

Frank Woodward, a well known brick maker, is considering the advisability of establishing a plant near Berkeley, Cal.

POTTERY NEWS ITEMS

The two pottery plants of the Western Stoneware Co., at Macomb, Ill., are to be started at once by the trust.

The plant of the United States Sanitary Pottery Co. near New Castle Junction, Pa., is now being operated to its fullest capacity.

A new six-kiln pottery will be built at Columbiana, O., by J. D. Beatty and Henry Buxton of Sebring, O. The site is south of town.

The Coosada (Ala.) Pottery Company has been incorporated with $5,000 capital stock by Warren H. Hakk, W. M. Beale and W. J. Junkins.

The Interstate Pottery Co., Trenton, N.J., has been incorporated with $100,000 capital stock by Frank E. Weeden, Charles C. Hill and Albert Hughes.

The potteries of East Liverpool, O., have 120 kilns and employ 2,920 men; of them a large majority are now working. Only a few of the plants are idle.

The Lambertville (N.J.) Business League reports that the subscription for the proposed pottery for the city is almost completed with the required amount.

The Bartlesville, Okla. Commercial Club has contracted to pay $20,000 bonus to the Hall China Co., of East Liverpool, O., for a pottery to make dinnerware and electrical porcelain, the plant to have 10 kilns and cost $150,000. The bonus has been raised.

SILICA AND CLAY PLANT CHANGES HANDS

A company of Portland, Oregon, and Eastern business men and capitalists has purchased the property of the Pacific Coast Silica and Clay Company, located three miles from Mosier, Ore. The old corporation was capitalized for $500,000. The new, organized under the laws of Oregon, has increased the capitalization to $1,000,000, with no stock for sale. E. E. Merges was elected president, C. R. Spencer, first vice-president; H. J. Martin, of Rowe & Martin, second vice-president; A. K. Bentley, secretary, and the German-American Bank, treasurer. The directors are E. E. Merges, A. K. Bentley, H. J. Martin, George Cherry, Charles Spencer, C. E. Leighton, H. W. Beatley, C. J. Owen, S. Q. Fulton and R. M. Hall. Mr. Beatley, who is from New York and who has had charge of the mine for several months, expending $50,000 in developments and experiments, represents several Eastern capitalists. S. Q. Fulton is president of the United States Gypsum Company, of Chicago. C. E. Leighton is a wholesale commission man of Seattle.

TO MAKE BRICK UNDER MR. WALSH'S PATENTS

The Granton Manufacturing Co. of New Durham, N. J., is to erect and operate a 12,000,000 capacity brick plant of the latest improved type. Under patents of Hiram H. Walsh, of Newburgh, N. Y., formerly engaged in brick manufacture in New Windsor, the brick will be dried with heats that other manufacturers waste. It is said one-half the cost of drying will be saved. By the use of appliances covered by Mr. Walsh's patents there will also be saved the labor of four horses and twelve men at the plant, which will be operated the year round. The appliances include a brick-truck, the first of which has been manufactured by Delancy & Colvill.

SAND OR LIME BRICK OR BLOCK NEWS

The Valrico Sandstone Co., Valrico, Fla., which was incorporated in December, will manufacture common and face brick from sand. R. Cay is president.

Local men are to put in a lime brick plant at Hutchinson, Kansas. The sand will be taken from the Arkansas river and the lime secured from the soda ash plant.

G. W. Clark is suing Lenox Reber, of Marion, O., for $8,000, amount invested in the plant of the Millholland Pressed Brick Co., claiming the plant was fraudulently represented.

A. J. Calkins and W. H. Roehn, who own the silica pit at Portage, Wis., have arranged for machinery for a plant to manufacture sand brick. Local people will join in the enterprise.

The plant of the Lake Superior Stone Brick Company, Calumet, Mich., will install machinery to make roofing tile. An agent of the company is now in Germany to purchase the machinery.

The Oklahoma Cement Brick & Products Company, Oklahoma City, Okla., has been incorporated with $50,000 capital stock by E. L. Benedict, W. C. Burke, and W. G. Kennedy, of Oklahoma City.

A receiver has been appointed for the Indianapolis (Ind.) Composite Brick Co., by the Probate court. R. H. Sullivan was named. The indebtedness is nearly $20,000, with only $18 in the treasury.

The Hercules Co., Rochester, N.Y., has been incorporated with $20,000 capital stock to manufacture brick, tile and pottery, by Charles J. McElroy, M. F. McElroy and Rudolph M. van Grafieldand.

The directors of the Excelsior Granite Brick Company, of Michigan City, Ind., inspected the plant on the 27th, when it was put into operation. The factory is operating day and night, making a fine sand lime brick.

The Sand Lime Brick Co., at Port Jefferson, L. I., N. Y., stole a march on the city, and from Saturday night to Monday morning built a building and put it under roof. There was some dispute regarding the company building on the property.

The old plant of the Austin Brick Co., at Cincinnati, O., was sold by sheriff to Edgar L. Kennedy and he reorganized it into the Western Pressed Brick Co., capital stock $60,000. The plant is on Western avenue. C. O'Hearn, A. H. Bode, Jr., F. L. Hoffman and R. A. LaBlond are interested with him.

TERRA COTTA COMPANIES DECREASE THEIR STOCK

The three New Jersey companies which went into the terra cotta combine a few years ago have filed with the secretary of state certificates decreasing the capital stock of the respective concerns.

The Perth Amboy Terra Cotta Company decreases its stock from $450,000 to $2,000. The Standard Terra Cotta Company decreases its stock from $200,000 to $2,000, and changes the location of its principal office in this state to the foot of Buckingham avenue in this city. The Excelsior Terra Cotta Company at Rocky Hill decreases its capital stock from $75,000 to $2,000, and also changes the location of its principal office from Rocky Hill to the foot of Buckingham avenue in this city.

MISCELLANEOUS ITEMS

The Logan (Ohio) Brick Mfg. Co.'s plant is not to be shut down as reported, but will be operated all winter, using 200 hands.

Mittag Brothers, of Henning, Minn., have leased clay land at Parkers Prairie, Minn., and will start up a brick works in the spring.

Henry Collins, of Hokes Bluff, Ala., contemplates establishing in Gadshen a plant for the manufacture of earthenware stove flues.

The Reynoldsville (Pa.) Clay Mfg. Co., whose plant has been idle for three years, has made arrangements to put same into operation.

The Hedgecock Brickyard Co., Winston-Salem, N. C., will install a new drying plant to their works at Walnut Cove, also make other improvements.

Houshour Bros. & Hunter, of Oklahoma City, are the promoters for a brick plant for Sapulpa, Okla., that will have a capacity of 100,000 brick daily.

The New Lexington (Ohio) Press Brick Co. elected the following new board of directors: B. F. Rodgers, C. H. Bell, John W. McDonald, J. O. Cullen and A. Garlinger.

The Queenstown Company, 2113 First Ave., Birmingham, Ala., reports that they will establish a plant for the manufacture of brick and tile and will locate within a few days.

The Rittman (Ohio) Tile & Clay Products Co. has been incorporated with $10,000 capital stock by D. W. McConnell, D. R. Lance, Forrest Mougey, W. Mougey and R. C. Morne.

The Clay Products Company, of Cuba, has been incorporated in Delaware to make clay products of all kinds. The main office is in New York City. Capital stock is $1,000,000.

The Sedalia (Mo.) Business Men's Association, of which D. H. Smith is chairman, will raise $12,000 by subscription for a brick plant to be built by Mecusker Bros., of Jamestown, N. Y.

The Gas Belt Brick Manufacturers met in Coffeyville, Kansas, and elected officers. The meeting was a general one and matters pertaining to the manufacture of brick were discussed.

The Coffeyville (Kansas) Vitrified Brick & Tile Co. are furnishing Cherryvale with natural gas and receive free water from the city in payment for same. A splendid arrangement for both the company and the city.

The Seaton (Ill.) Brick & Tile Co., owned by John Truckenbrodt, has been sold to John E. Stark and W. C. McProud, of Monmouth, who will operate same. Mr. Truckenbrodt having purchased a farm in Minnesota.

The Humboldt (Tenn.) Brick & Tile Co. recently elected the following officers: C. H. Farrell, president; J. J. Thweatt, vice-president; Geo. D. Dodson, secretary, and J. T. Brown, treasurer. Improvements will be made to their plant.

The Gilmore Brick Co., Westboro, Mass., has been incorporated with $50,000 capital stock. S. A. Gilmore is president, Frank P. O'Donnell is treasurer, and Joseph Pell secretary. They will operate the Gilmore brick yard in east Main street.

The Portland (Ind.) Tile and Hollow Building Block Co. have changed their name to the Portland Drain Tile Co.

The plant of the Sun Glass Co., Willsburg, W. Va., has been sold and will hereafter be used for the manufacture of tile.

The brick machinery for the new plant of the Girard (Kansas) Brick Company is all in and work progressing rapidly.

Sam J. Allen, owner of brick plants in Elk City, Kansas, and Okmulgee, Okla., is considering putting in another plant at Muskogee, Okla.

The Brooklyn (Ind.) Brick Co., has secured a large contract from the Standard Oil Co., to furnish brick for the new pumping station at Hagerstown.

The citizens of Boyce, Texas, are considerably excited over the discovery of a large deposit of Fuller's earth and Karlin. Already mineral leases are being made.

J. M. Beale & Co., Paw Paw, Ill., have bought two acres of clay land adjoining their West Brooklyn plant so as to make necessary extensions. F. J. Biggart is the local manager.

The Granto Mfg. Co. is to erect a large brick manufacturing plant at New Durham, N.J. The plant will have an annual capacity of 12,000,000 brick and will use the H. H. Walsh system.

At the annual meeting of the Sherbrooke Gas & Vitrified Brick Co., LeRoy, Kansas, the old officers were reelected and J. W. Coggan is the local manager. A new oil burning system is being installed.

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

The Miller Brick & Stone Co., Pittsburgh, Pa., has been incorporated with $25,000 by George P. Miller and others.

The Pittsburgh-Callery Brick Co., Pittsburgh, Pa., has been incorporated with $10,000 capital stock by Peter McIlroy, of Keesport.

Fred Sacks is now the manager of the Capital City Brick & Paving Co.'s works at Topeka, Kansas. J. Boltz, who has held the position for years has resigned.

The Artistic Brick Mfg. Co., Asbury Park, N.J., has been incorporated with $12,000 capital stock. Incorporators are Alfred Jefferson, Jr., Geo. K. Wilkins and Albert V. Bazin.

At an annual meeting of the stockholders of the Southern Tile & Brick Co., Jackson, Tenn., a ten per cent. dividend was declared and prospects for a brighter season are in sight.

Portland, Oregon, and eastern business men have bought the property of the Pacific Coast Silica & Clay Co., at Mosier, Oregon, and have reorganized with $1,000,000 capital.

A syndicate headed by Thomas Tansey and Louis Weber of Frankfort, Philadelphia, Pa., have bought the Cornelious property, 75 acres in extent, and will convert it into a brick yard.

At the annual meeting of the Badger Pressed Brick Co., Bradford, Pa., W. W. Bell was elected president; A. C. McConnell, vice-president, and C. C. Stratton, secretary-treasurer and manager.

As soon as the weather will permit the Valley Ford (Wash.) Brick & Tile Co. will build their shed and prepare for the machinery to make brick and tile. Fred E. Humber is the president and manager.

The Bartlesville (Okla.) Vit. Brick Co. recently met and elected the following officers for the year: J. W. Jones, president; J. L. Overlees, vice-president, and J. H. Holin, secretary-treasurer and manager.

At the annual meeting of the Badger Pressed Brick Co., elected old officers and decided to make a number of improvements to their plant. Robert Zinke is president; A. J. McCreary, vice-president, and E. H. Korrer, treasurer.

At the annual meeting of the Badger Pressed Bricg Co., Fond du Lac, Wis., W. I. Hamilton was elected president; E. H. Lyons, vice-president, and W. A. Titus, secretary-treasurer and manager. It was decided to add new equipment to the Oakfield plant.

Geo. G. Baldwin has purchased an interest in the Rothwell Brick & Mfg. Co.'s plant at Pooler, Ga., and the capacity will be enlarged, and during the year a plant will be put in to make roofing tile. The office of the company is 410 Stone street, Savannah.

The stockholders of the Saginaw (Mich.) Paving Brick Co. recently elected J. H. Qualman, president; Geo. W. Weadock, vice-president; J. H. Sleeth, secretary and general manager, and Charles H. Kepler, assistant manager. Mr. Qualman's interests on the Pacific coast make it so he has retired as manager.

The stockholders of the Hanover (O.) pressed Brick Co. recently held their annual meeting at Newark and elected the following well known gentlemen as officers: President and general manager, C. H. Torry; vice-president, W. H. Smith; secretary and treasurer, C. C. Torry. They announced a seven per cent. dividend.

Milo J. Sprang, Poe, Ind., has moved his tile plant to Sheldon in the same county and expects to begin operations in a few weeks.

The Williams Coal Co., Lansing, Mich., have found a fine deposit of fire clay in the pit owned by the company, and are having same tested.

The Noble Brick Co., Glenwood, O., has increased its capital stock and are building six more kilns, nearly all of the shares being taken by the nearby farmers.

The Premier Fire Clay & Products Co., Oskaloosa, Kansas, has purchased the Schmalley land south of town, and will commence at once to build a brick and tile plant. Mr. Dennison is manager.

The plant of the Auburn (Pa.) Shale Brick Co. has been closed down to make extensive repairs and improvements, after which they will start up full capacity of the plant. The office of the company is in Reading, Pa.

D. V. Purington, chairman of the executive committee of the Purington Paving Brick Co., Galesburg, Ill., and one of the best known clay manufacturers in America, observed his 68th anniversary January 22, in the sunny south.

George Gotthold has leased land on Horton street, opposite the Old Ladies' Home at Wilkesbarre, Pa., and will build a modern clay brick plant costing $50,000. A stock company will be organized to carry out the work.

At the recent election of the Grand Rapids (Mich.) Consolidated Brick & Tiling Co., William J Clark was elected president, to succeed the late Cornelius Clark; Henry Brown, vice-president, and J. L. Davidson, secretary-treasurer.

ARE you troubled with White Wash? Do you want to make a better face brick? Do you want a wider and more profitable market for your product? Do you want to make from the same material, whether light or dark, a variety of colors and shades that are winners in the market and double your margin of profit? Why not go your competitor one better?

Let us help you earn larger dividends.

J. B. & I. L. HAMMOND

EXCLUSIVE AGENTS FOR THE

LYNN BRICK FACING MACHINE

Adds two dollars to fifteen dollars per thousand to the value of your product and costs but little in comparison. Positively the most advanced step yet taken in the manufacture of impervious face brick. Inquiries promptly answered. A collect telegram will bring representative.

J. B. & I. L. HAMMOND

Specialists in the Brick Making Industry,
BOLIVAR, PA.

CASH

For your Real Estate or Business. No matter where located if you want te buy, sell or exchange any kind of business or real estate anywhere at any price, call on or or, address,

FRANK P. CLEVELAND
1725 Adams Express Building,
Chicago, Ill.

HUDSON RIVER BRICK PLANT

Will lease on easy terms a fully equipped two machine soft mud brick plant, large open yard. Immense bank of clay and sand. Dock frontage on deep water adjoining railroad. Houses, barn, kiln sheds, Engine & Boiler, etc. etc.

Address RICK
Clay Record Chicago, Ills

WANTED

A 25M capacity belt delivery, side cut table. Must be ready to do perfect work. No time to exchange letters—be frank, write exact conditions, make, how long used. Is it ready to do first-class work? Best cash price.

We are also wanting a disintegrator. Address
J. T. FOLSOM, Boonville, Ind.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

FOR SALE

One right-hand disc fan, complete with shafts and bearings.

One Atlas Engine, automatic, right-hand, 100 horse-power; used only two years. Address
Kankakee Brick and Tile Co,
Kankakee, Ill.

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4
Care Clay Record, Chicago

FOR SALE

One splendid well equipped small brick plant. Good location; brick sells at $10 per thousand. Good small residence on property. Have contracted to make 300,000. Everything first class; wish to sell soon on account of other business. This plant can be bought very cheap and on good terms.

George Barney.
Lock Box 366, Leesville. La.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address
Southern Brick & Tile Co.
Louisville, Ky.

MACHINERY WANTED

I am in the market for the purchase of 12 cylinders, 6 ft. 2 in. in diameter by 40 feet long; also a large number of hardening cylinder brick cars.

Address COLBY M. AVERY, Aurora, Ill.

FOR SALE
SECOND HAND MACHINERY

Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2⅛ in. to 1½
One McGowan & Co. 6 in. to 6 in.
One Blake 6 in to 6 in.
One Erie Engine 75 h. p.
One No. 7 Dean 4in. to 6 in.
One Blake 3 in. to 4 in.
Two Cameron 3 in. to 4 in

Three Centrifugal pumps 4½ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in. Buffulo Force Fans. One Stutervant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make. One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill One No, 2 and No 3 Mead Mill. Four 32 in and one 42 in. Munson Mills.

The above machinery has been used only a short time.

S. KRUG WRECKING CO.
Nebraska City, Neb.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

WANTED

Wanted, a 50,000 capacity pug mill Address
Sioux City Brick and Tile Works,
Sioux City, Iowa.

FOR SALE OR LEASE

Good soft mud brick plant in city of 10,000 in Indiana; capacity 25,000. Will be sold at a bargain on easy terms; good reasons for selling. Aydress
R 5, care Clay Record,
Chicago, Ill.

FOR SALE

75 Tripple Deck Drain Tile Wooden Dryer Cars, roller bearings, 31 inch track gauge, all in good running order, now in daily use. Will hold 200 4 inch tile and 30 12 inch tile.

Kankakee Tile & Brick Co.,
Kankakee, Ill.

MACHINERY FOR SALE

One 3-Mold Boyd Dry Press.
One 3-Mold Andrus Dry Press.
One 2-Mold United States Dry Press.
One Freese Stiff Mud Machine—A special.
One Standard Board Delivery Cutting Table.
One Freese 8-foot Pug Mill.
One "Centennial" Stiff Mud Brick Machine.
One Fernholtz 42-inch Pulverizer.
One 6-foot Iron Frame Mixer.
One Chandler-Taylor 10x12 Steam Engine, good as new.
One 8x12 Steam Engine. Good condition.

SCOTT MANUFACTURING CO.,
Third National Bank Bldg. St. Louis, Mo.

FOR SALE CHEAP

One Clay Pulverizer revolving style like Fernholtz. Almost new, made by Scott Mfg. Co. St. Louis, Mo. Address
Lewis Electric Light Co.
Lewis, Iowa

FOR SALE

Second-hand No. 5 Nolan & Madden machine with tile dies 4 to 8 inches, and new cutting table. Machine in perfect order.

Second-hand No. 2B Mich. B. & T. Machine Co. machine with tile dies 3 to 8 inches, cutting table, side cut brick die and table. Will sell these machines cheap; address
J. F. CLARK.
Morenci, Mich.

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana,"
Care Clay Record, Chicago, Ill.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio.

Address A. B. care Clay Record,
Chicago, Ill.

BOOK WANTED

Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.
Book, care Clay Record,
Chicago, Ill.

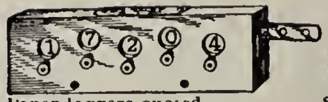
FOR SALE

5000 brick Pallets 10½ by 32 inches, kiln shutters and grate bars. Address
Jno. Brill Jr.
2580 Madison Ave.
Indianapolis, Ind.

FOR SALE

One 25 horse power engine and boiler, a tile and brick machine, crusher, conveyor, two tile tables, board delivery brick table, kiln bands, doors and grates.

Diller Tile Co.,
Bluffton, Ohio.



No better made, cut from $8 and $10, to
4 Wheel, $3 00
5 Wheel, $3.25
Guaranteed.
Paper Joggers quoted.
Sold by all dealers
R. A. HART 41 White St., BATTLE CREEK, MICH

INVEST IN PRESSED BRICK AND TILE PLANT

In Hope, Arkansas, where we have four railroads in operation and two other lines building.

Hope is ninety-three feet higher than the city of Little Rock, has a population of 5.303 and is steadily growing. We have good health and the finest of water.

Abundance of shale on St. L. I. M. & S. Ry., in edge of Hope; I have samples of brick to show test of shale, though you should come and test it yourself if interested.

Good mud brick plant here but no other clay plant of any kind, above is needed, large territory to supply.

Reliable brick maker will invest $2,000 00 and take charge if you wish.

A. P DYKE.
Hope, Arkansas

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

WANTED

A man with some capital to take an interest in an old established clay making machinery plant, in business 45 years, who would be competent to fill the office of secretary and treasurer and at times go out on the road installing new machinery and collecting, etc. Address
JIM, care Clay Record, Chicago

FOR SALE

One 9-ft. dry pan, made by the American Clay Machinery Company. This pan is as good as new. having been used only about 60 days. Write for price to
The Alpena Portland Cement Co.,
Alpena, Mich.

FOR SALE

Penfield Auger Brick & Tile Machine No. 6 with complete set of dies and hand cut-offs for brick and tile. In fine condition, snap price

AMERICAN IRON WORKS
DesMoines, Iowa

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick. Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

WANTED

To interest a practical man with two thousand dollars to invest in a well established Brick & Tile business. For particulars address,
Marengo Brick & Tile Co.
Marengo, Iowa

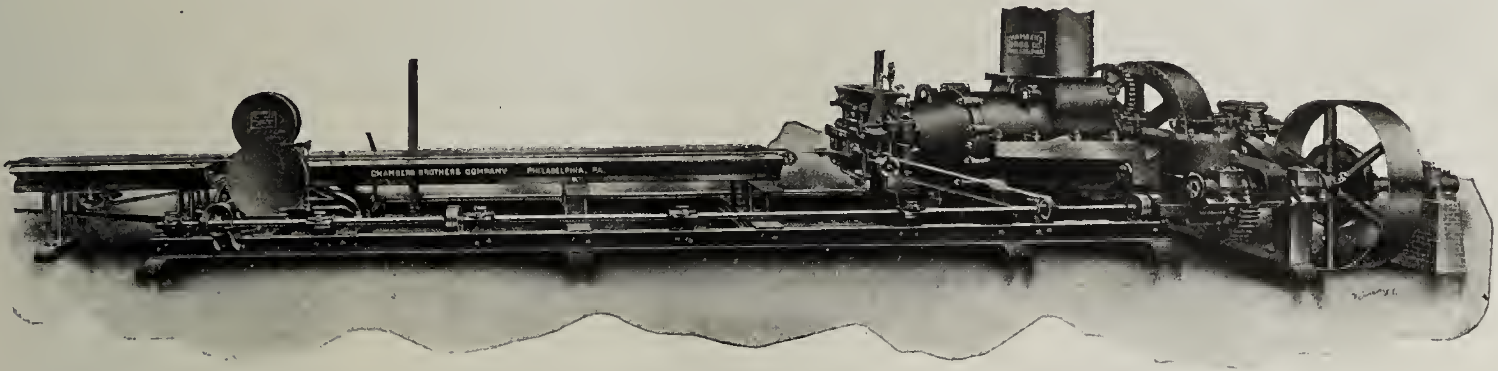
CLAY AND COAL FOR SALE OR LEASE

Have 1,500 acres of the celebrated Carter Co. fire clay and coal land to sell very reasonable or lease on royalty. Three veins of fire clay and one three and one-half foot of coal in same hills at Denton, Ky., on line of two railroads

Fine prospect for oil and gas.

Address: J. H. BURDETTE,
622 West Caster Ave.,
Ashland, Ky.

Chambers Brick Machinery



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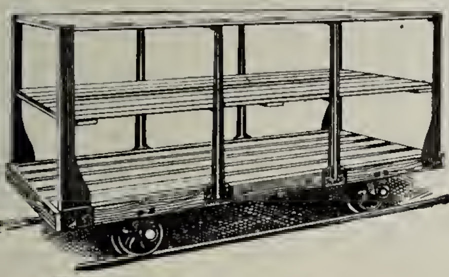
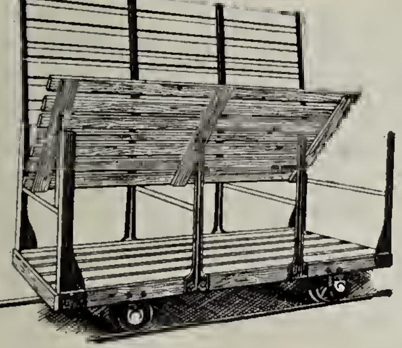
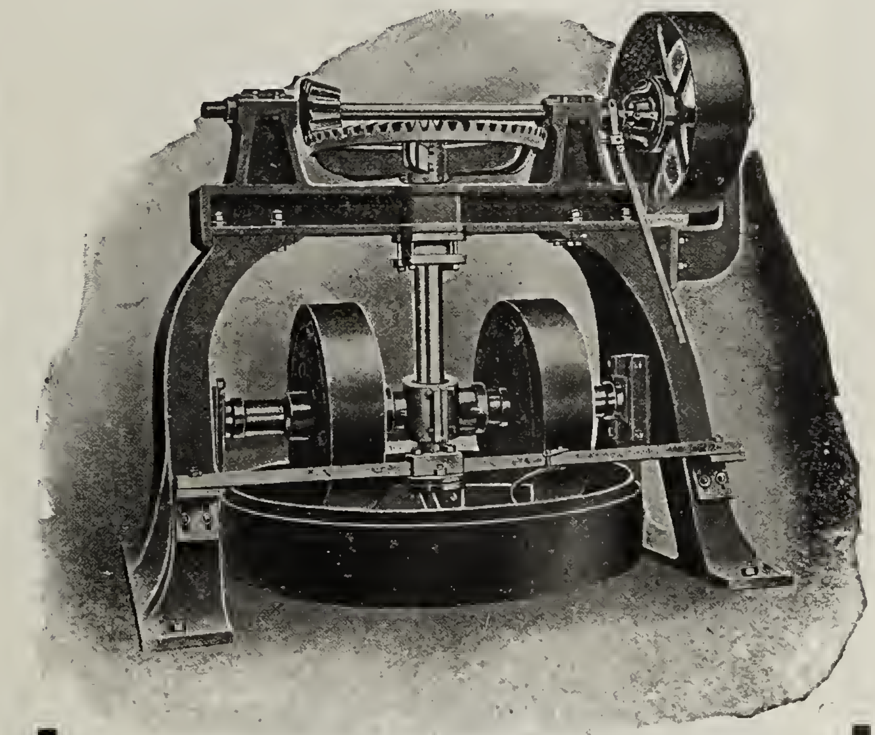




Vulcan Iron Works MASON CITY, IOWA



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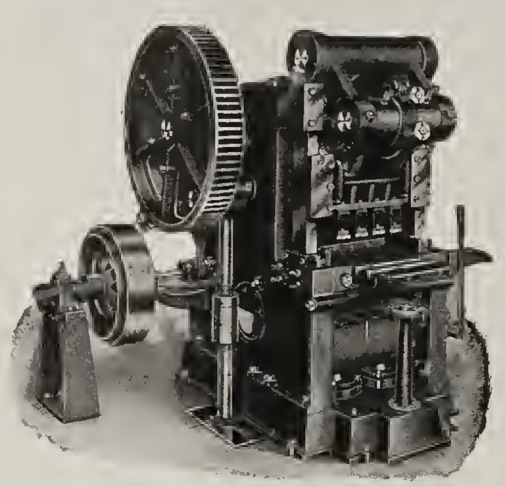
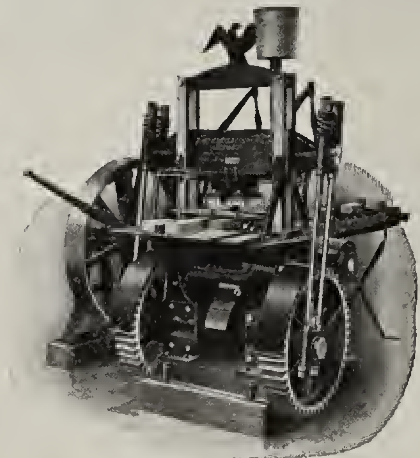
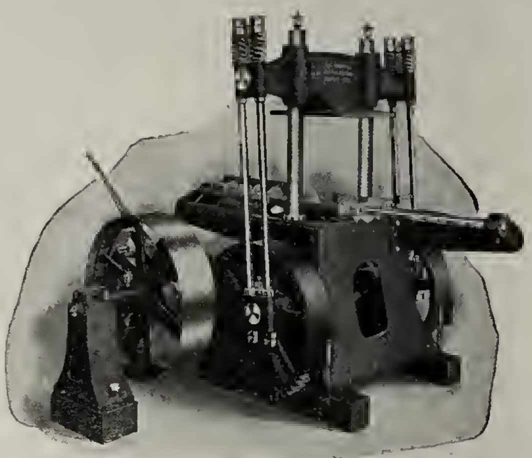
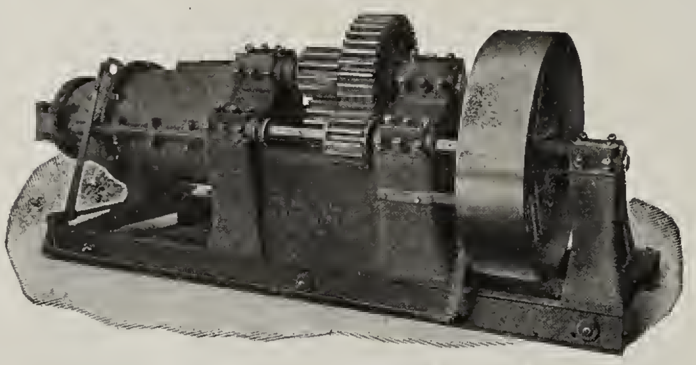
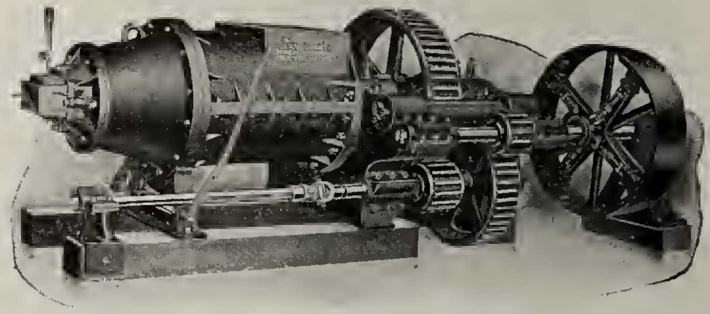
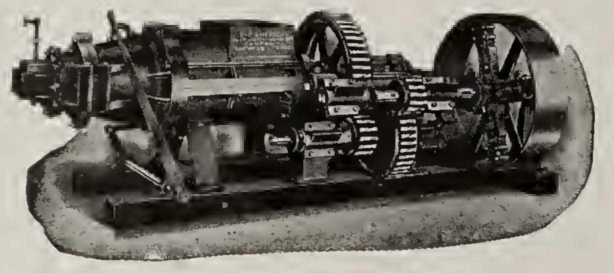

Model "B" Dry Press

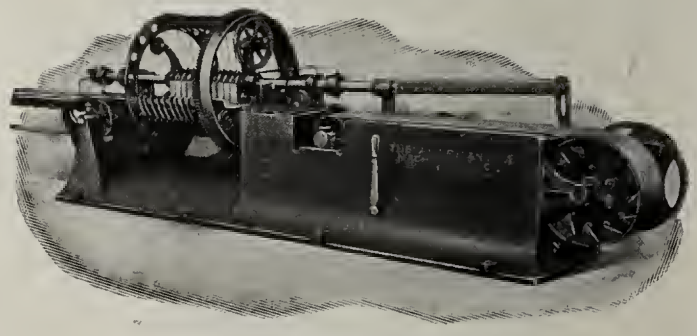

Eagle Repress

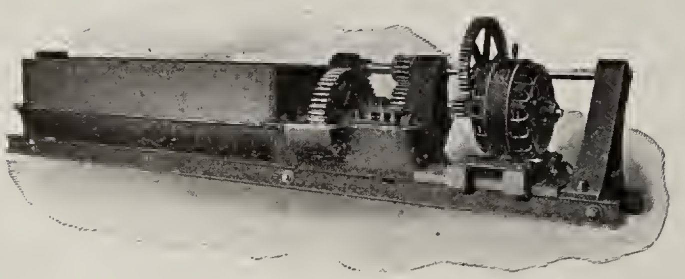

Roofing Tile Press


No. 65 Auger Brick Machine

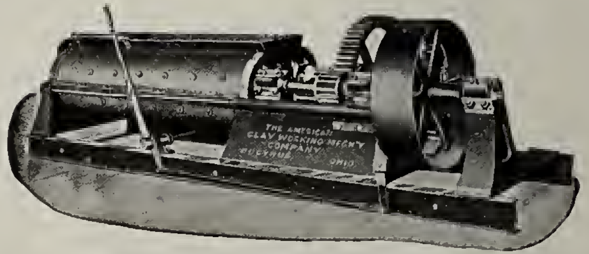

Special Giant Brick Machine


No. 2 Giant Brick Machine


No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

THE AMERICAN CLAY MACHINERY COMPANY

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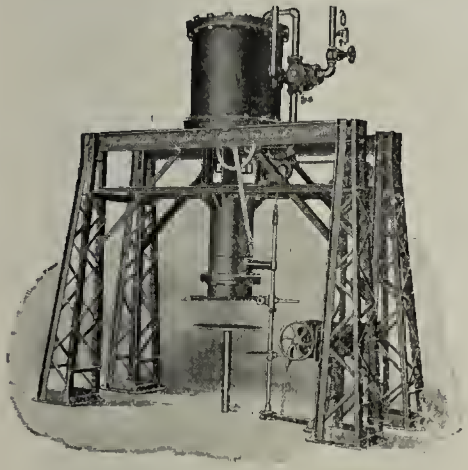
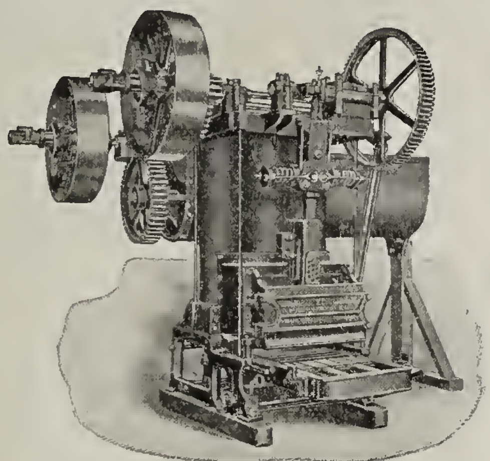
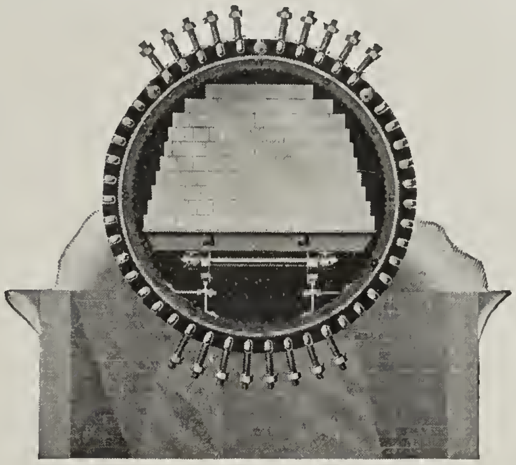


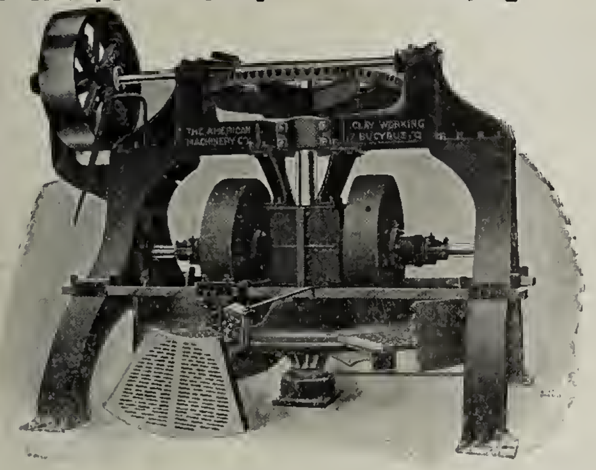
Sewer Pipe Machinery



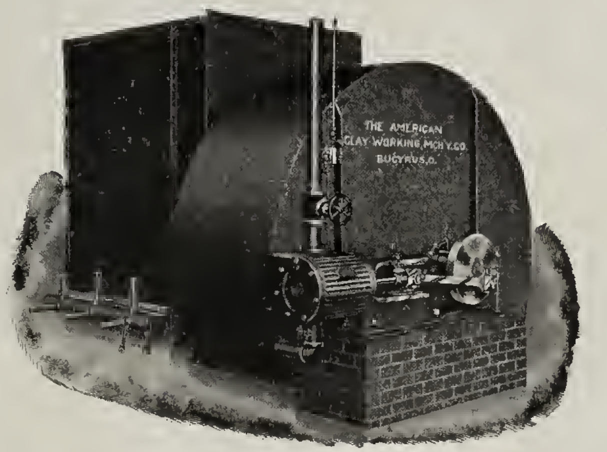
Upright Stock Brick Machine



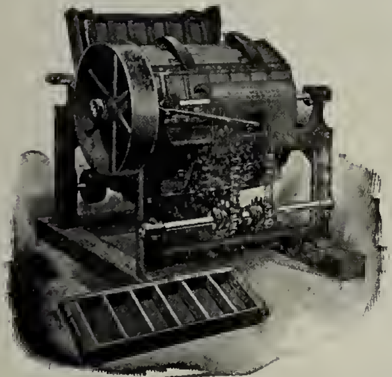
Sand-Lime Brick Machinery



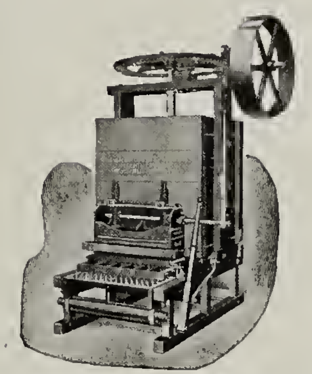
9 Foot Dry Pan



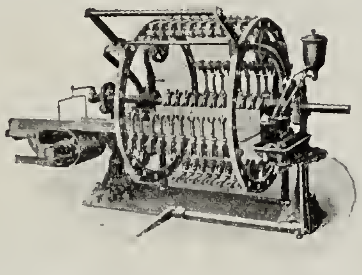
Blower Dryer Apparatus



Mold Sander



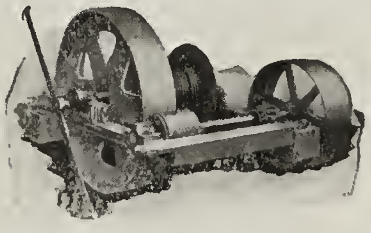
H. P. Brick Machine



No. 62 Hand Power Cutter

Dry Cars

Disintegrators



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Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

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A Manual for all Engaged in the Manufacture of Articles from Clay

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The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902

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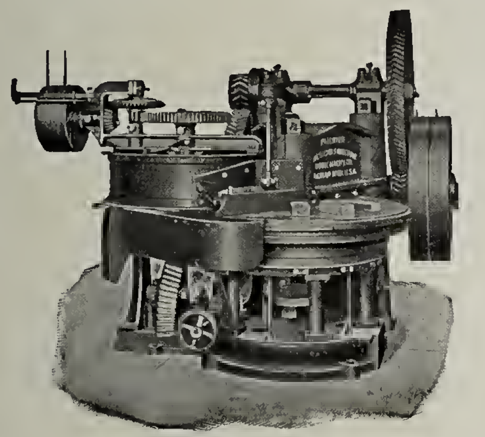

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MANUFACTURERS OF BRICK
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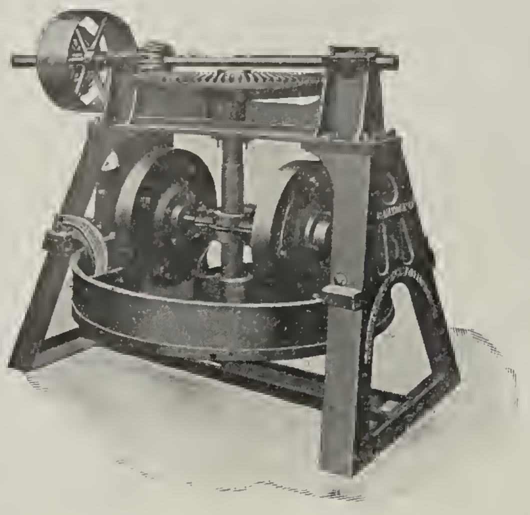

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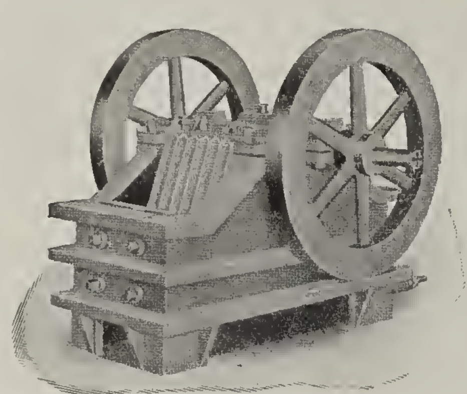

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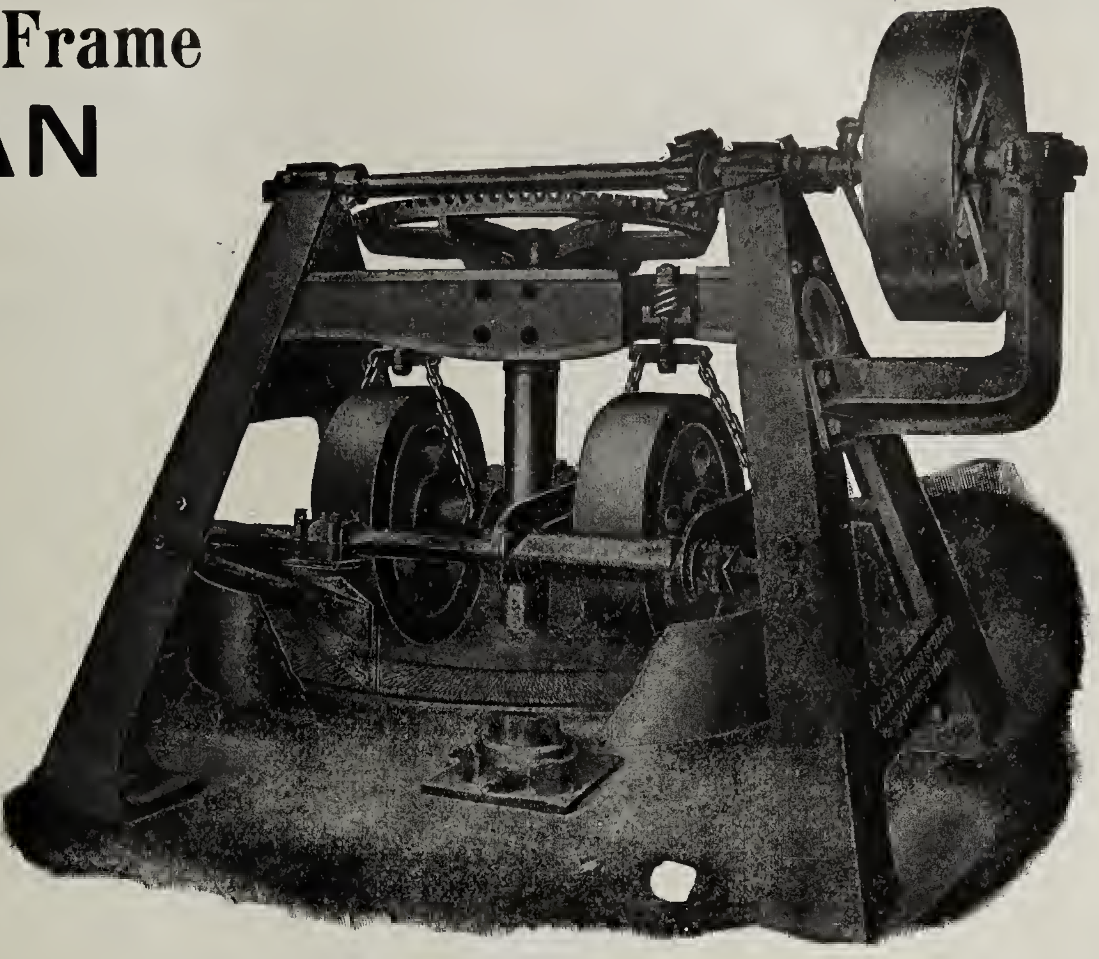

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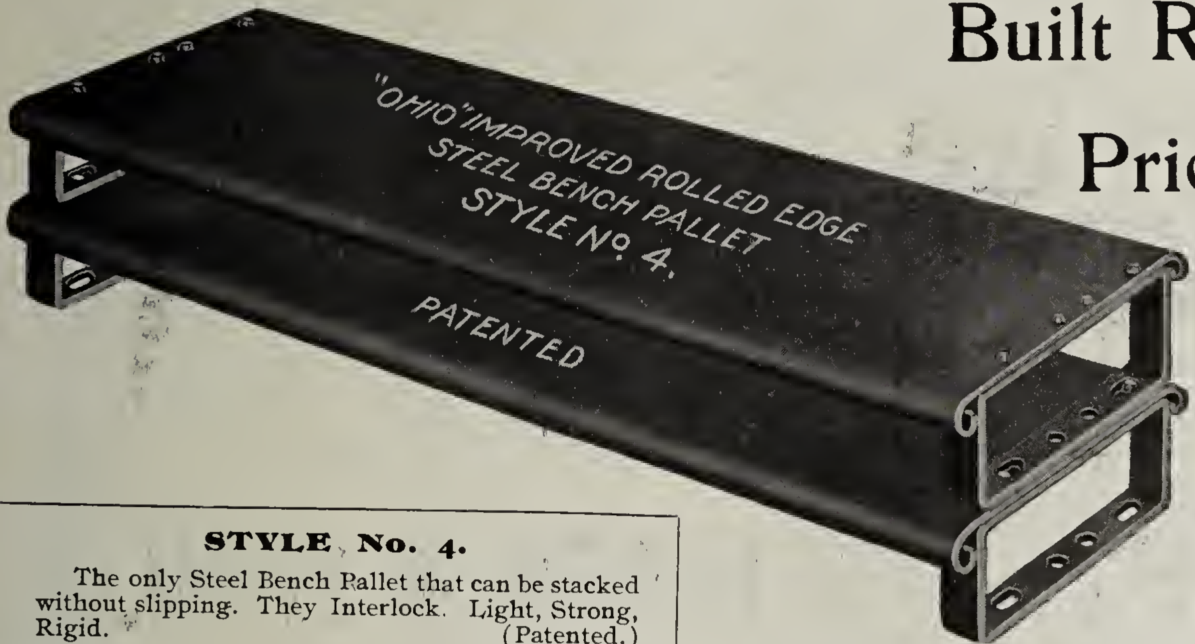

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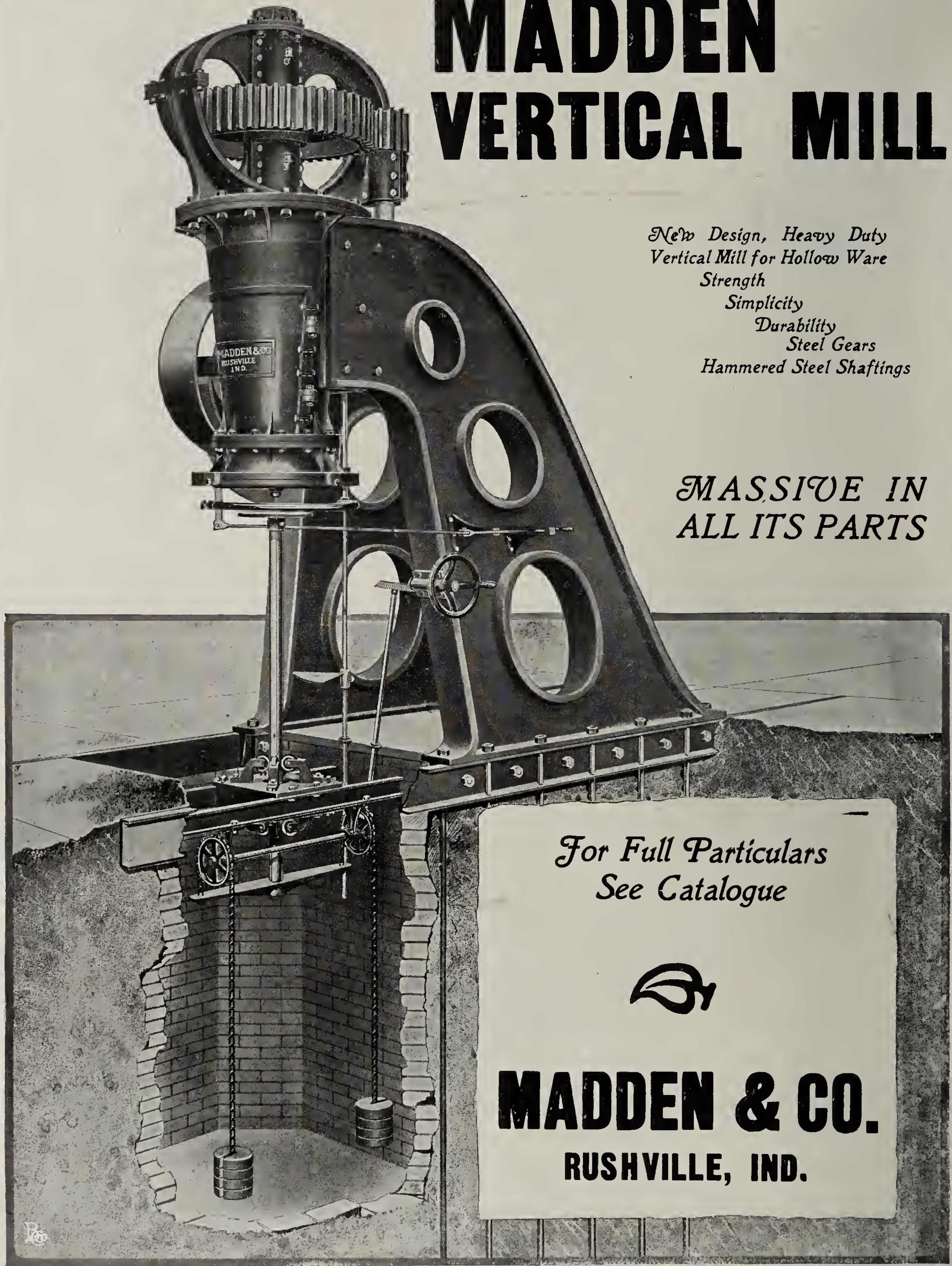

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MASSIVE IN
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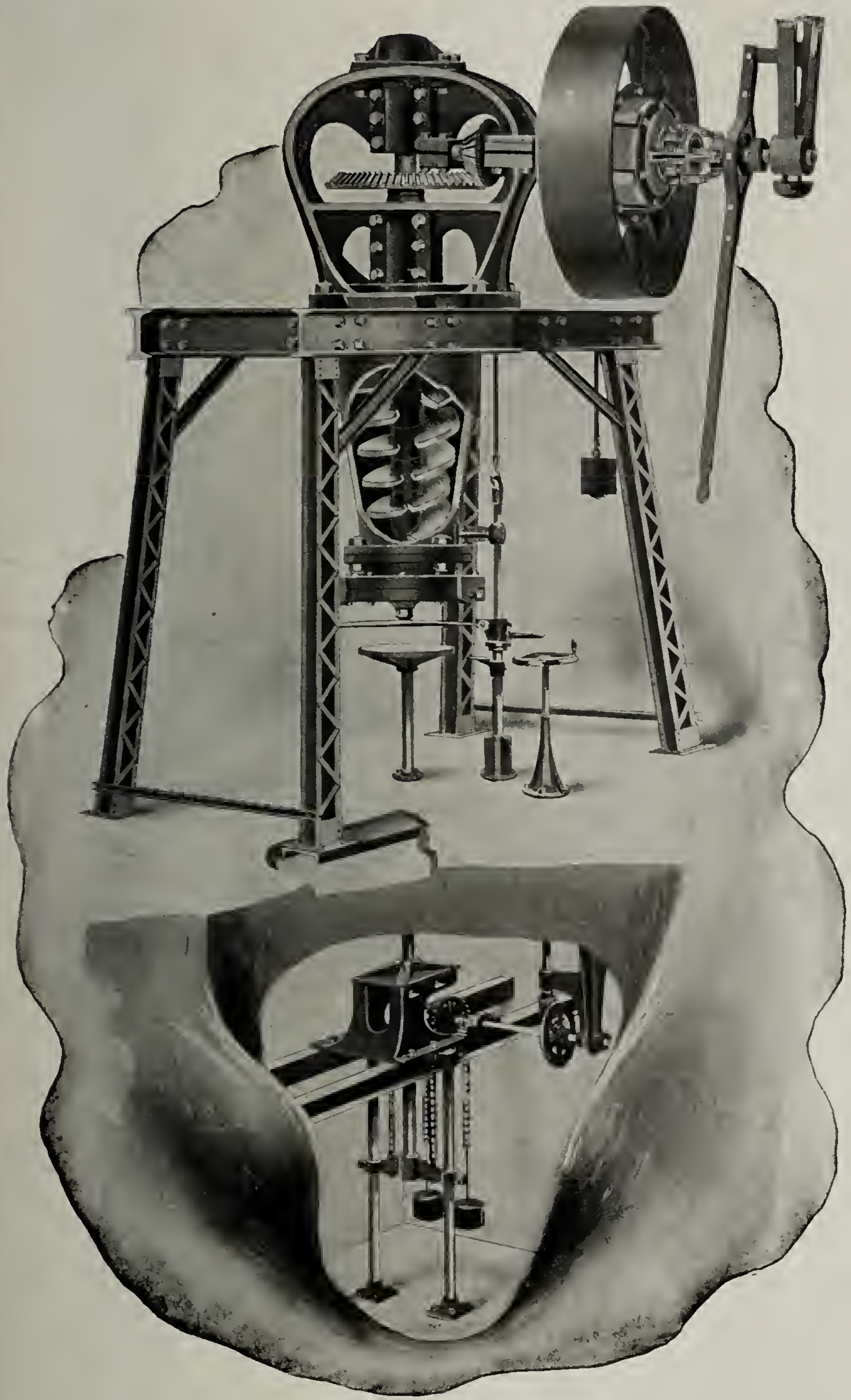
(*Type "F"*)



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combining
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Easy to operate

A
thoroughly tested type
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13 years
in stubborn clays

Can be furnished without iron frame if desired.
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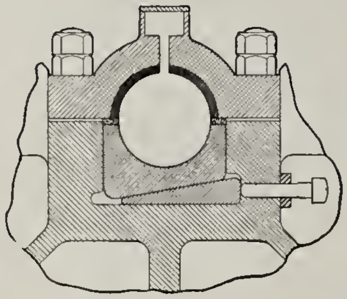
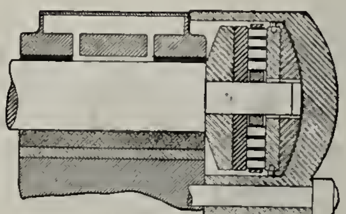
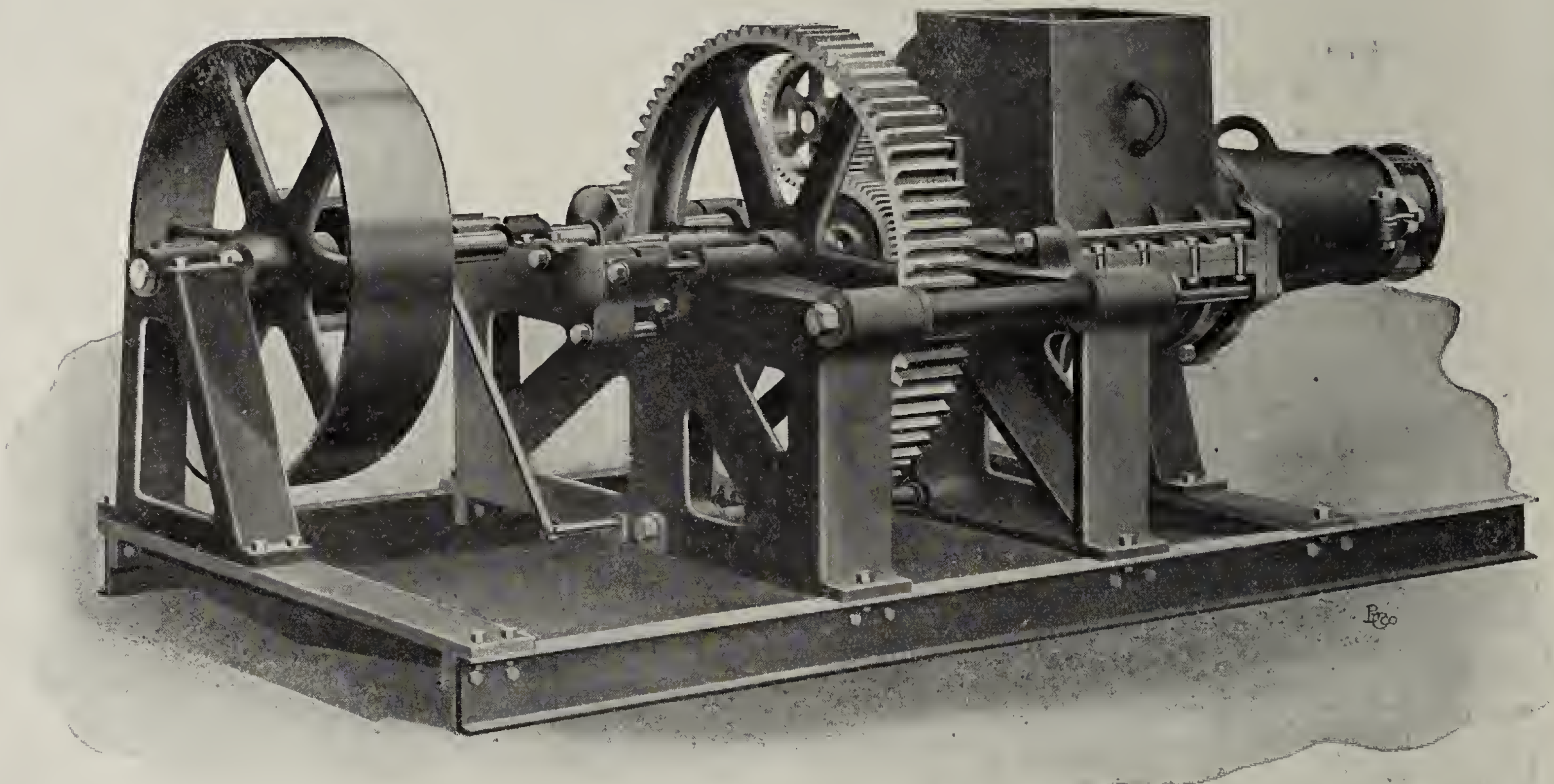
Madden Horizontal BRICK TILE Mill







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Madden & Co. - Rushville, Ind.

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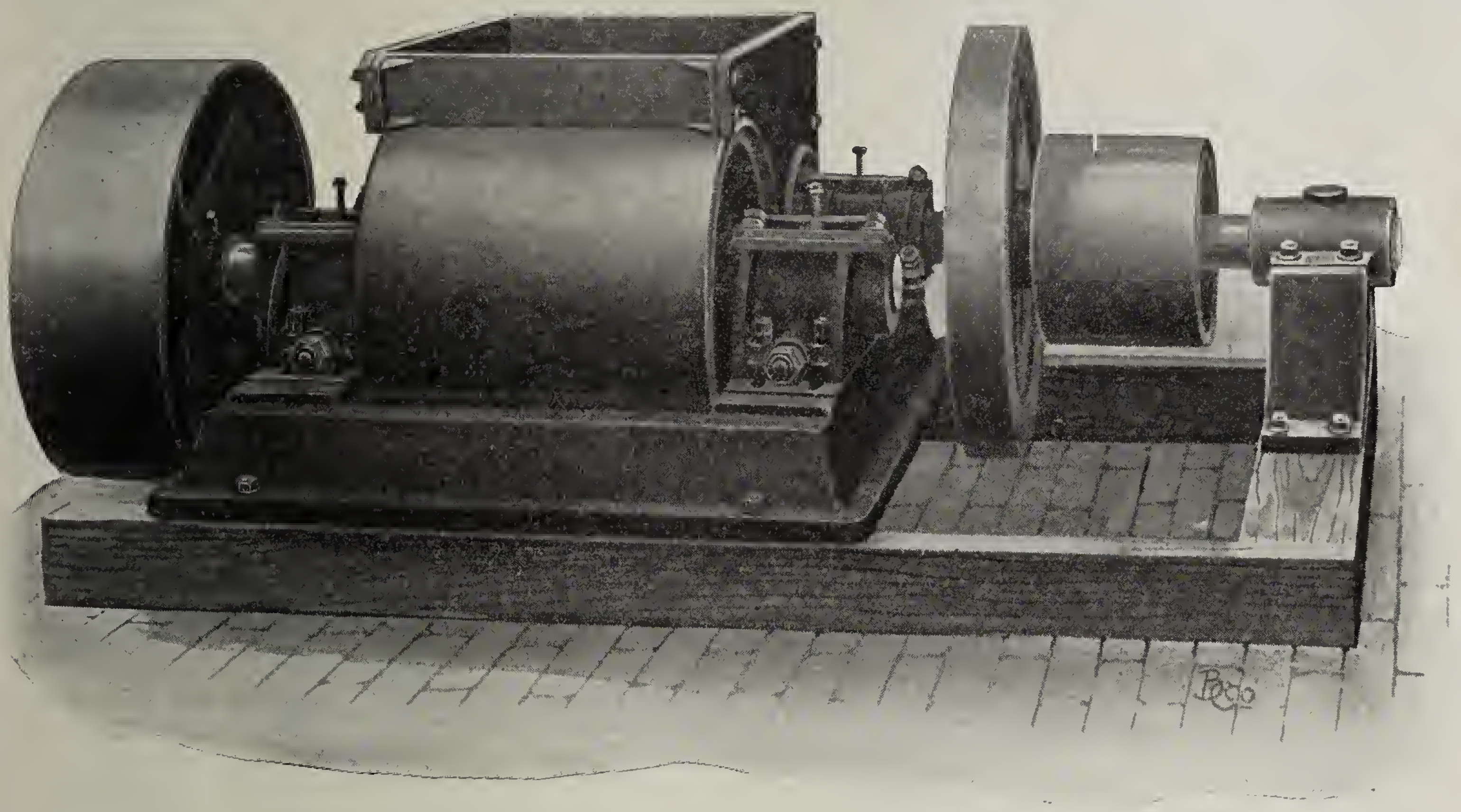
Rolls Chilled White Iron *Bearings Ring Oiling*
With or Without Springs



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FAST ROLL 14x24 *FEEDER ROLL 24x24* *SHAFTS 4-in. DIAMETER*

Our new No. 3 Heavy Duty Disintegrator will compare in massiveness and productive qualities with any machine on the market. Bed plate design embodies every feature calculated to insure the greatest strength. Bearings are divided at an angle of 45°, and are lined with genuine Copper-Hardened Babbitt and are of the Ring-Oiler connection. For full description see catalogue.

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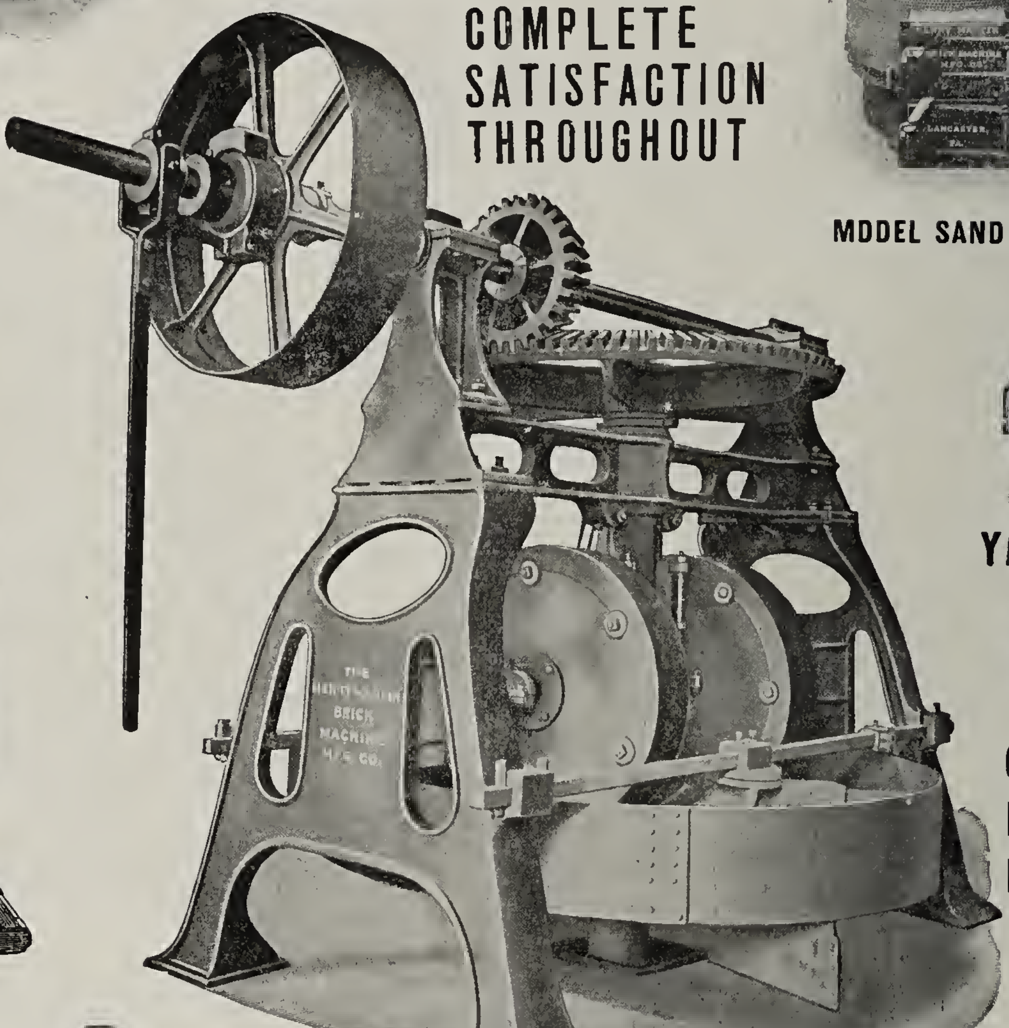

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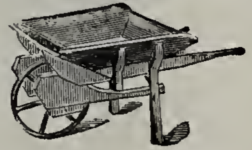

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TRUCKS

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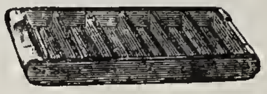

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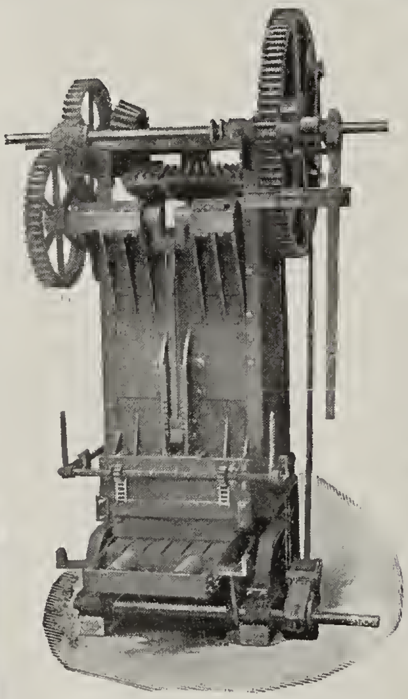
WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



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"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"

STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

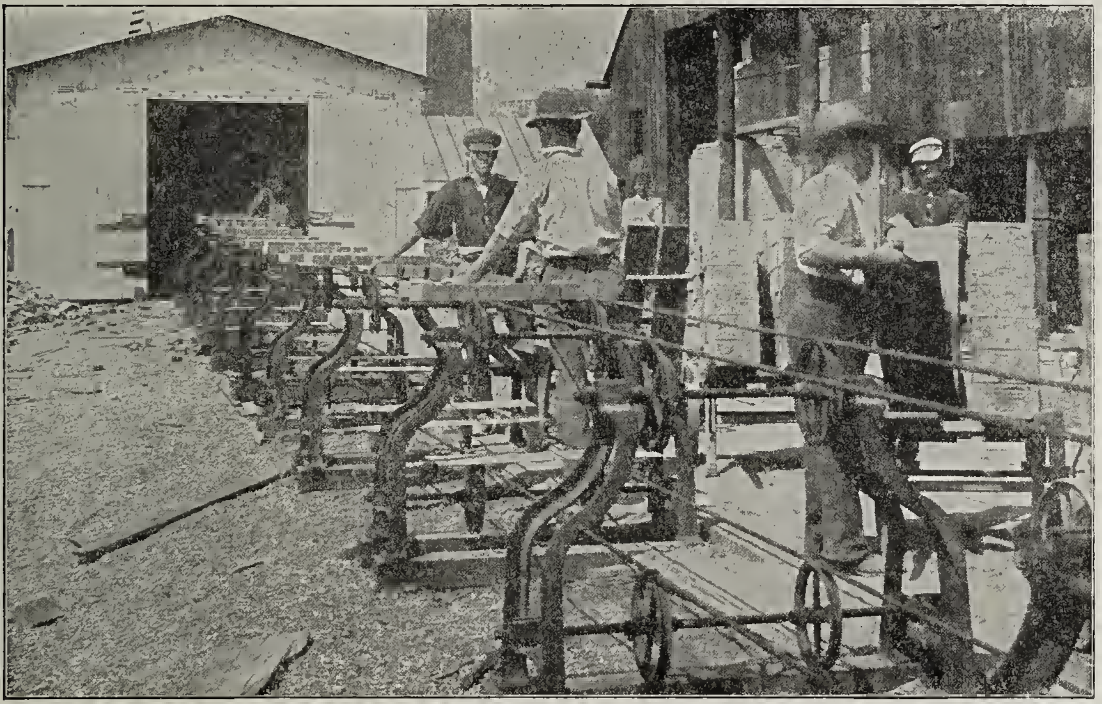
PATENTED

February, 22d, 1898,	No. 599509
October 10, 1905,	No. 95520
November 14, 1905,	No. 804489
May 26, 1908.	No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞



From "Martin Patent System" Brick Dryer to Kilns

☞ LABOR SAVING THROUGHOUT ☞

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

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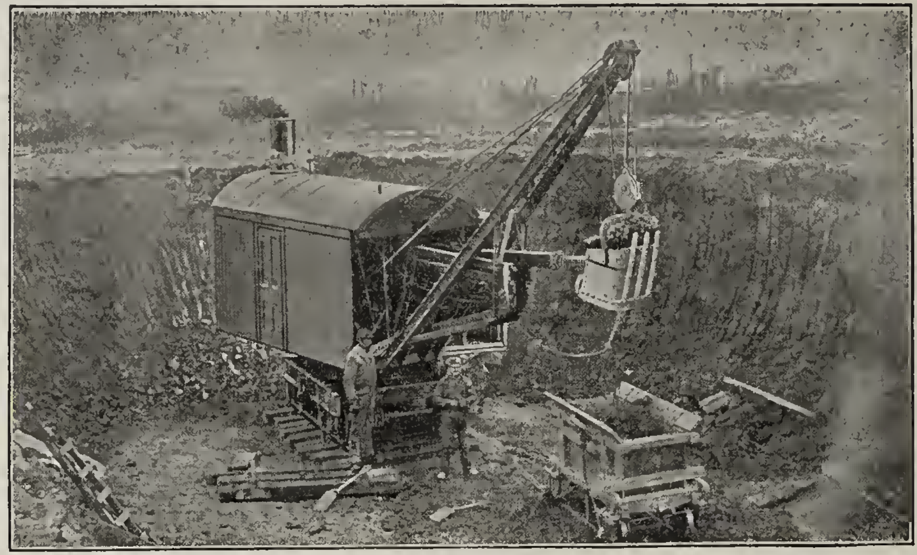
HANDLE YOUR CLAY WITH ONE MAN AND **The Thew Steam Shovels**

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.



Type No. 0 Shovel—Ohio Brick Co., Toledo, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Only One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.
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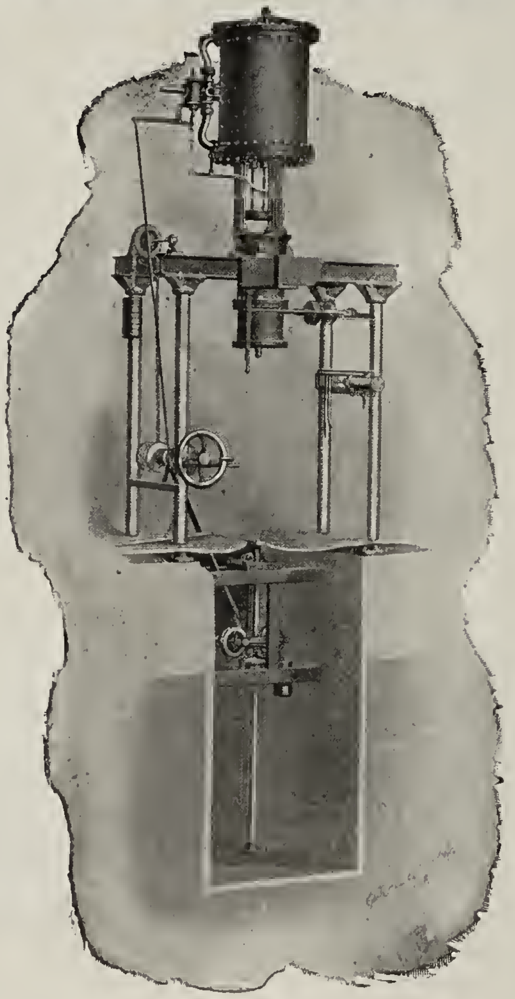

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MACHINERY

DRY AND WET PANS

Socket Dies, Ring Dies,
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Write us for prices. State capacity wanted.

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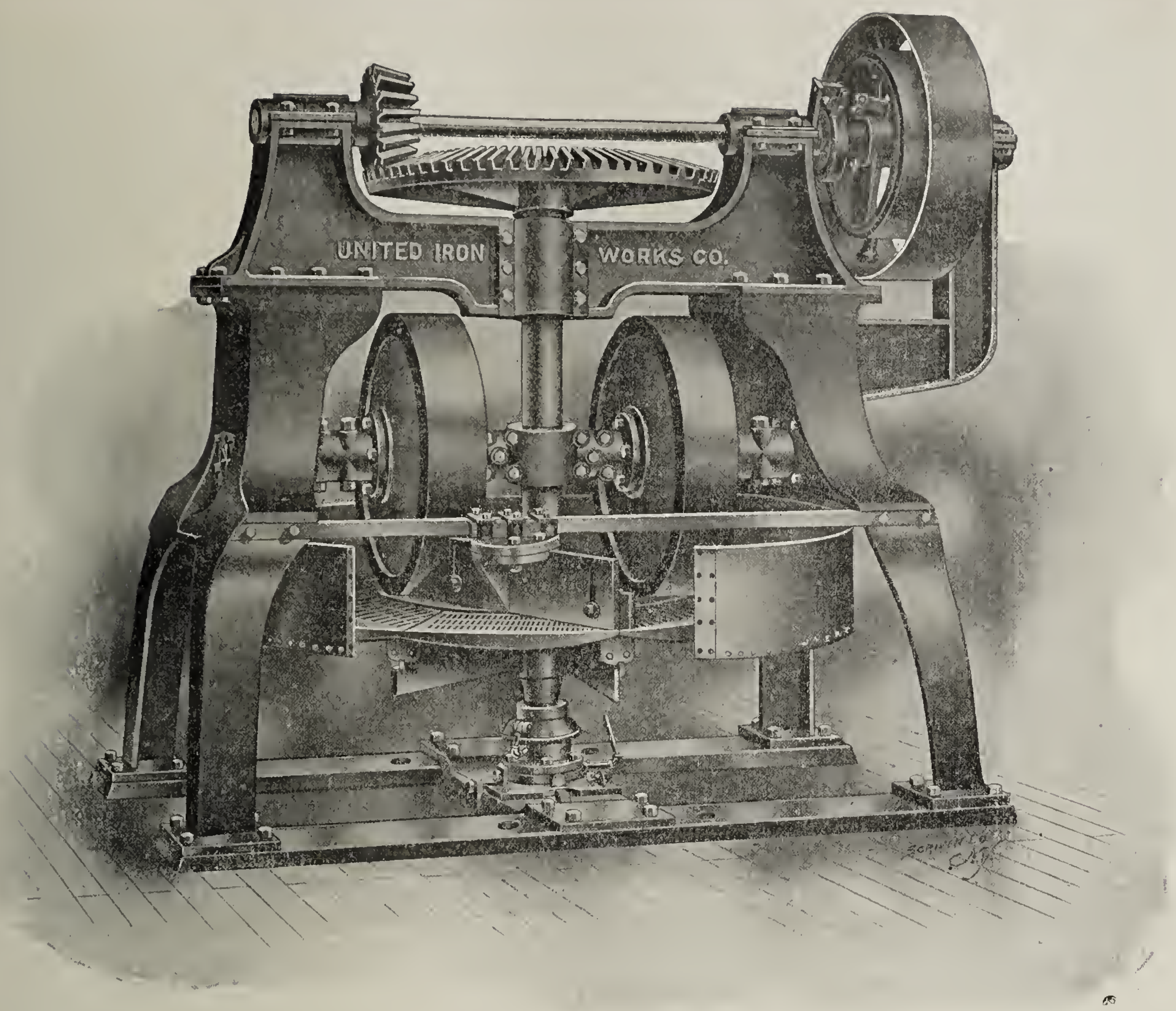

Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
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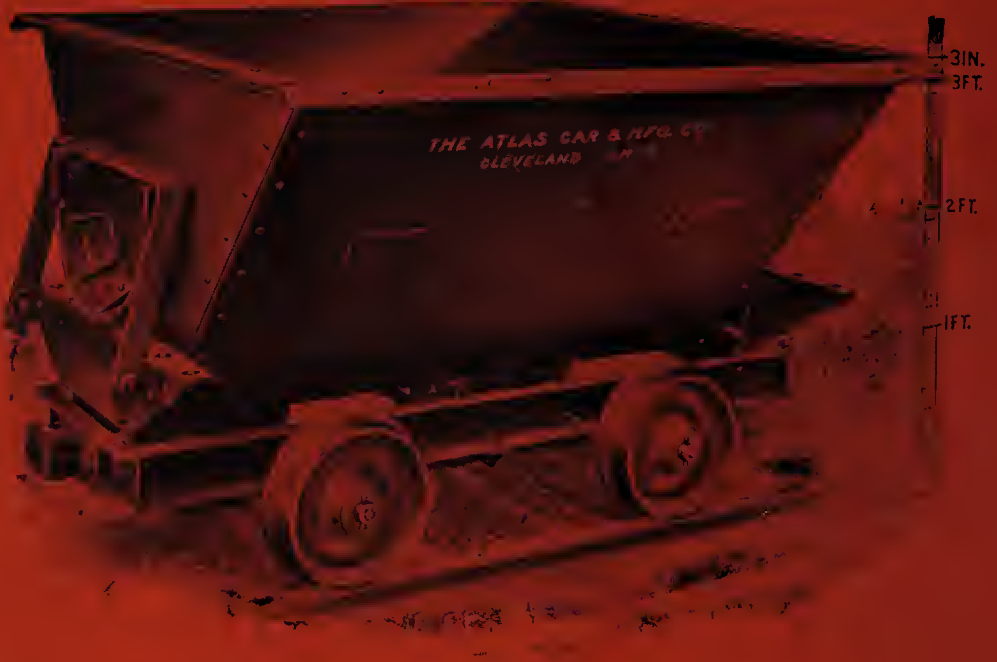
No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.



NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 34 No. 3

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
— TO THE —
· CLAY · —
— · INDUSTRY ·

February 15, 1909

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The Youngren Gas Fired Continuous Kiln

Announcement

We are pleased to announce to the Brick Making World that we have taken over all patents of the late *Peter L. Youngren* of Milwaukee, Wisconsin, covering the *Youngren Gas Fired Continuous Kiln* and all other types of the Youngren Kiln.

The success of this kiln is now most thoroughly established. All who are interested in the installation of the *Youngren Producer Gas, Gas Fired Continuous Kiln* are invited to consult us for particulars regarding construction, operation and contracts of same.

The C. W. RAYMOND CO.
Dayton, Ohio, U. S. A.

We issue the following publications which may be obtained upon application to our Publicity Department.

"Smiles"

General Catalogue
"Old Methods Discarded"

"Dry and Why"

EXHIBITS

2040—Heavy Duty Dry Pan.
2044—"999" Brick Machine.
2045—Perfection Hand Represses.
2046—Conveyors.
2047—Four Roll Combination Crusher.
2049 Niagara Hollow Ware Machine.
2053—Bevel Geared Pug Mills and Granulators.
2056—Portable Track.
2060—Roofing Tile Designs.
2061—Dry Press Machinery.
2063—Raymond System of Open Air Drying.

EXHIBITS

2069—Peerless Smooth Roll Crusher.
2070—No 3 Daytonian Brick Machine.
2075—Universal Semi-Automatic Cutter.
2078—Soft Mud Machinery.
2081—Automatic Wet Pan Emptier.
2083—No. 1 Rotary Automatic Cutter.
2084—Dryer Cars.
2085—Hand Dry Press.
2086—End Cut Cutting Table.
2087—"777" Brick Machine.
2088—Hoisting Apparatus.

EXHIBITS

2089—No. 2 Combination Brick Machine.
2090—No. 2 Daytonian Brick Machine.
2091—Cup Elevators.
2092—Conical Roll Crusher.
2093—Piano Wire Screen.
2094—Single Geared Pug Mill.
2095—No. 2 Rotary Automatic Cutter.
2096—"555" Brick Machine.
2097—Low Frame Pan.
2098—Victor Repress.
2099—Radiated Heat Dryer.
2100—Standard Pug Mills.

Practical Tests and Chemical Analyses

The C. W. Raymond Company

DAYTON, OHIO, U. S. A.

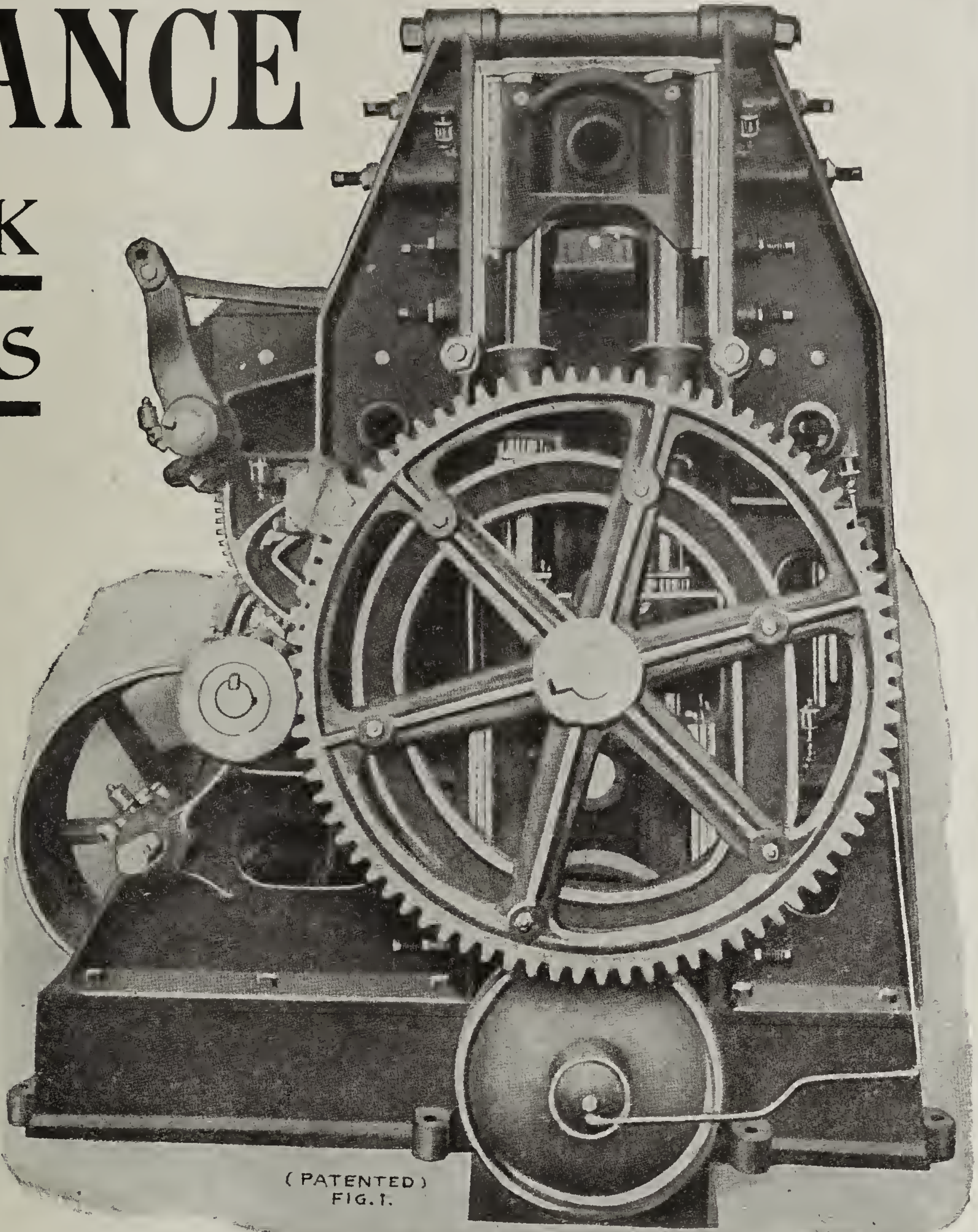
RELIANCE

BRICK PRESS

The Only Machine Making Brick Without Granulated Centers

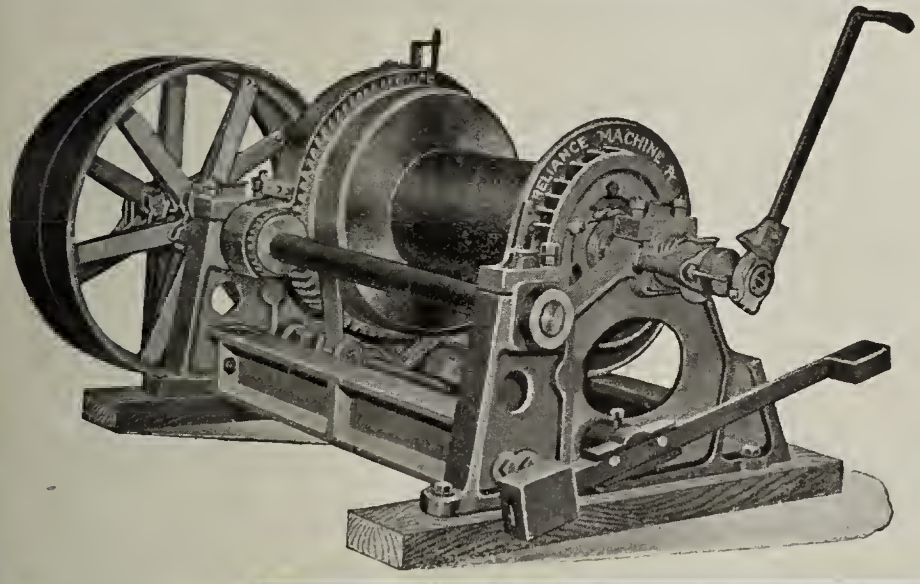
No Toggles
Powerful
Simple

We Design and Equip Dry Press Brick Plants Complete



(PATENTED)
FIG. 1.

Improved Reliance Friction Drum Hoist



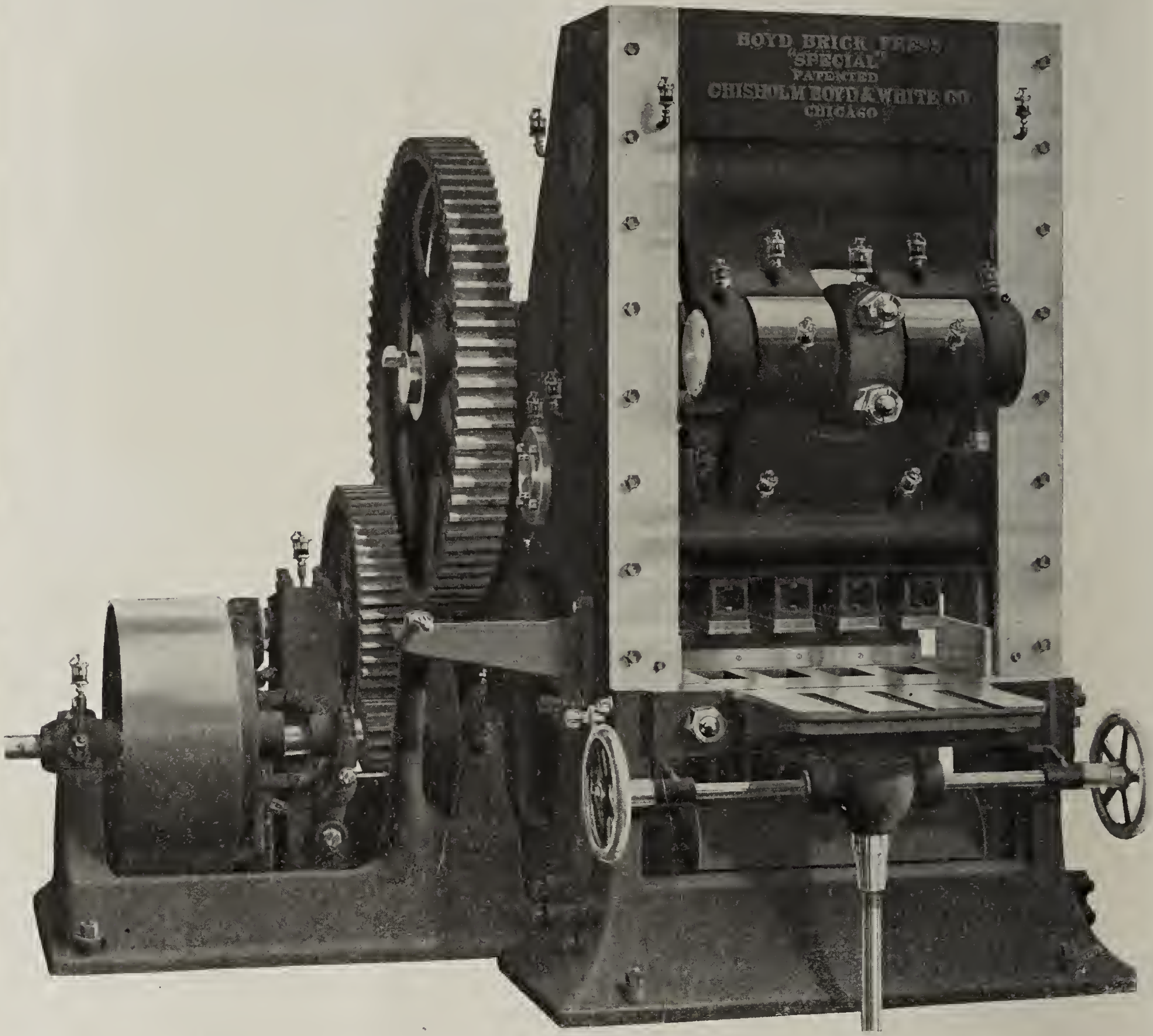
STEAM OR BELT DRIVEN

Specially Adapted to Service in Clay Plants

RELIANCE MACHINE and TOOL WORKS, St. Louis, Mo.

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company
Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

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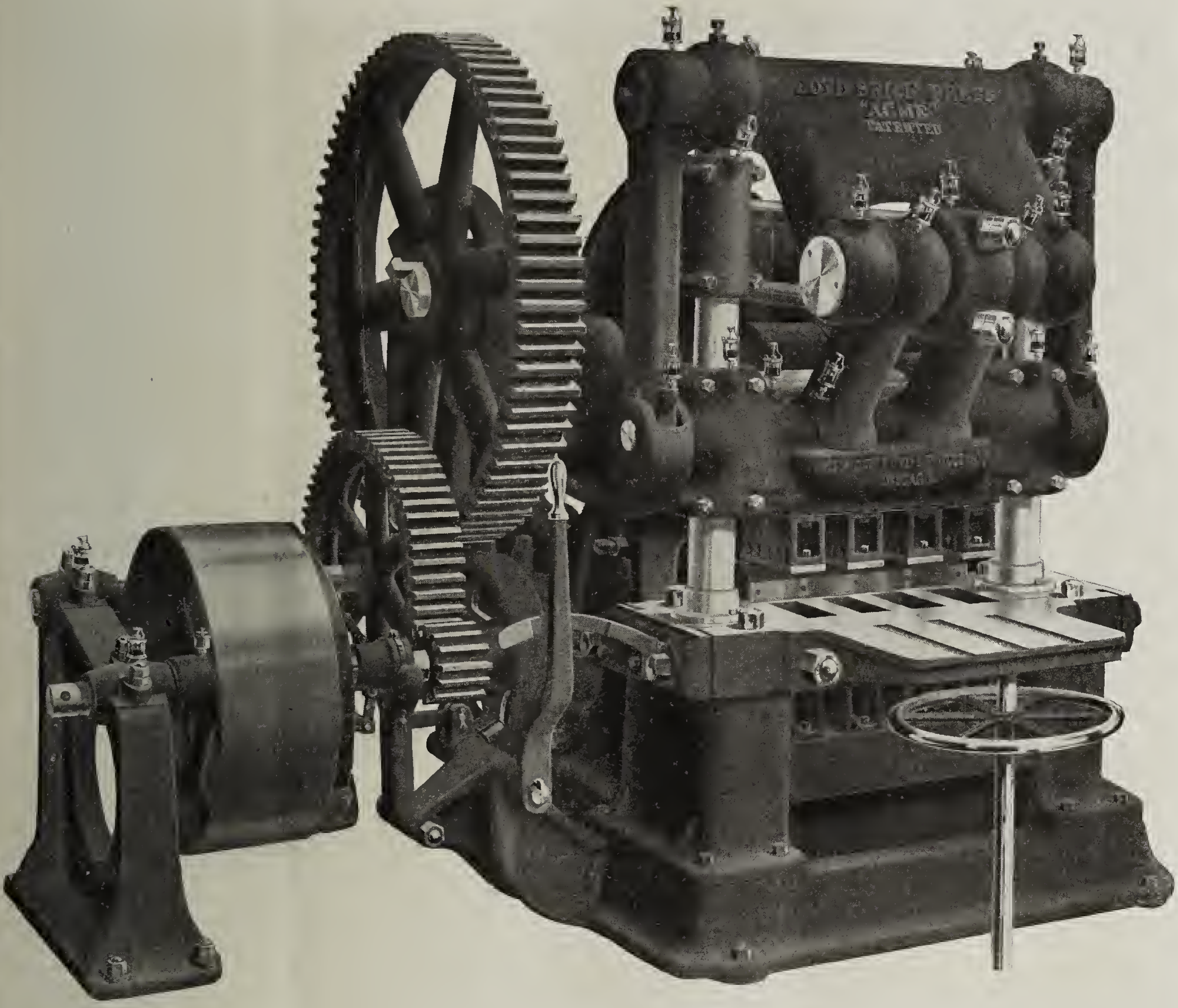
Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

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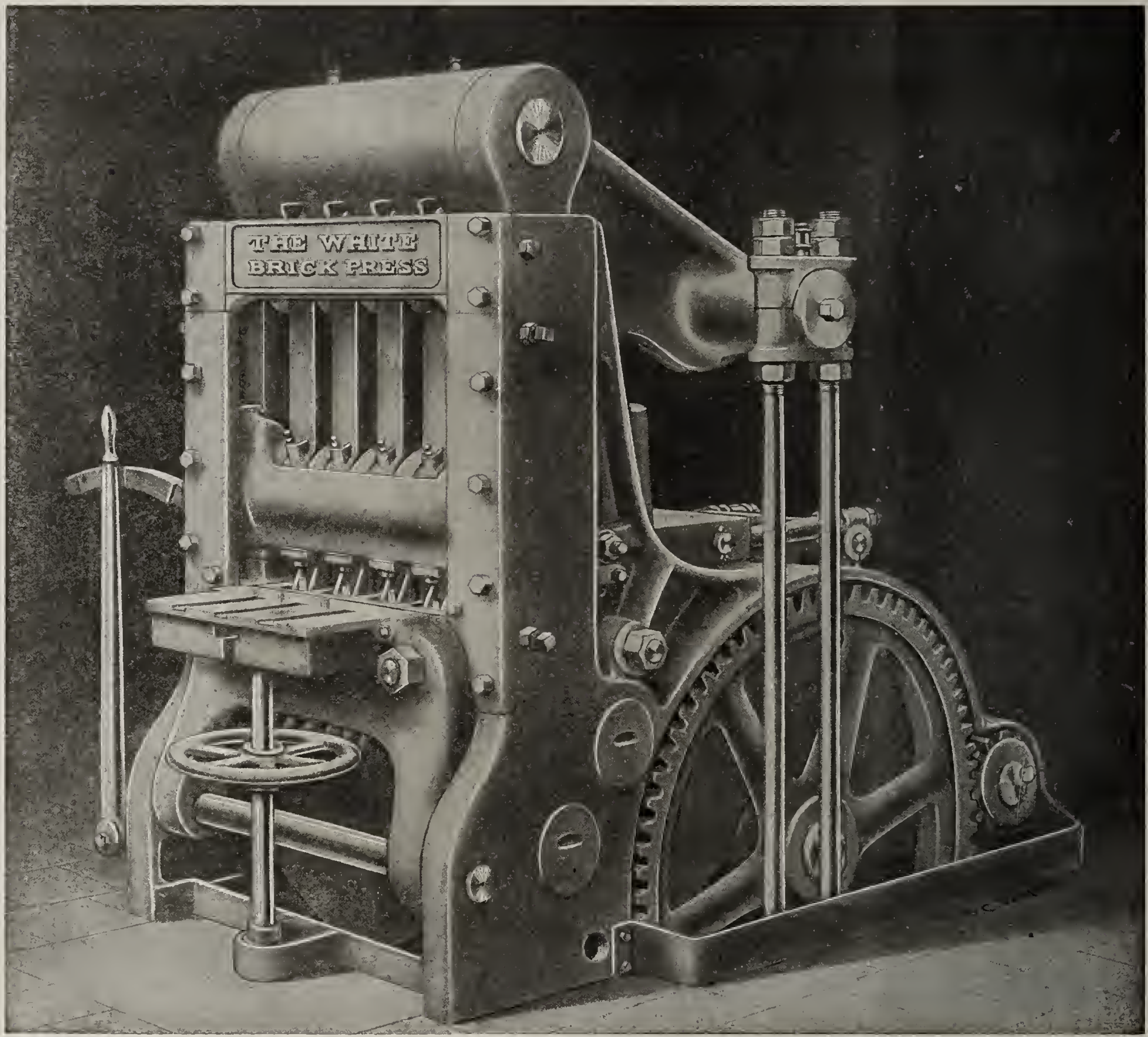
ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

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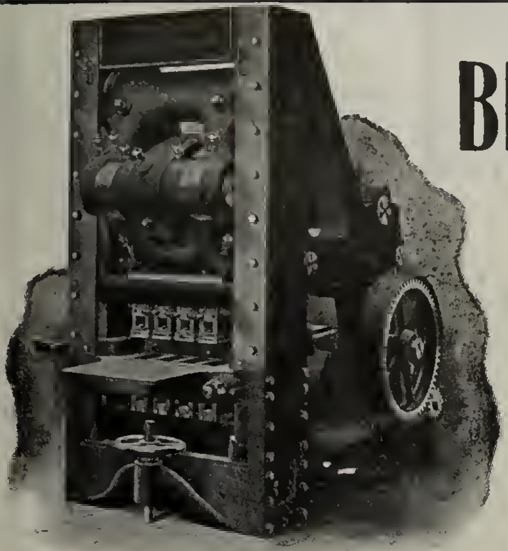
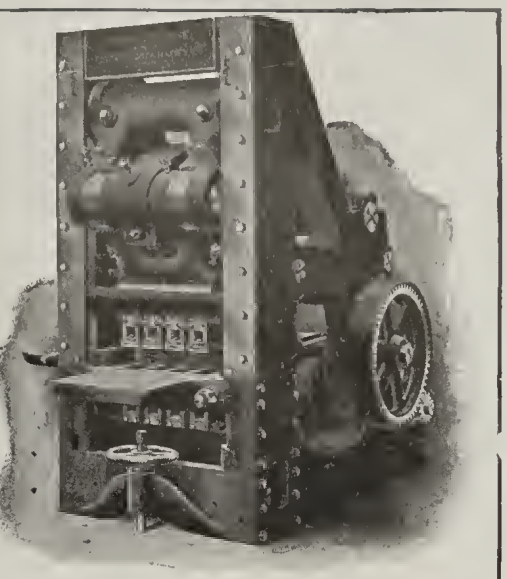
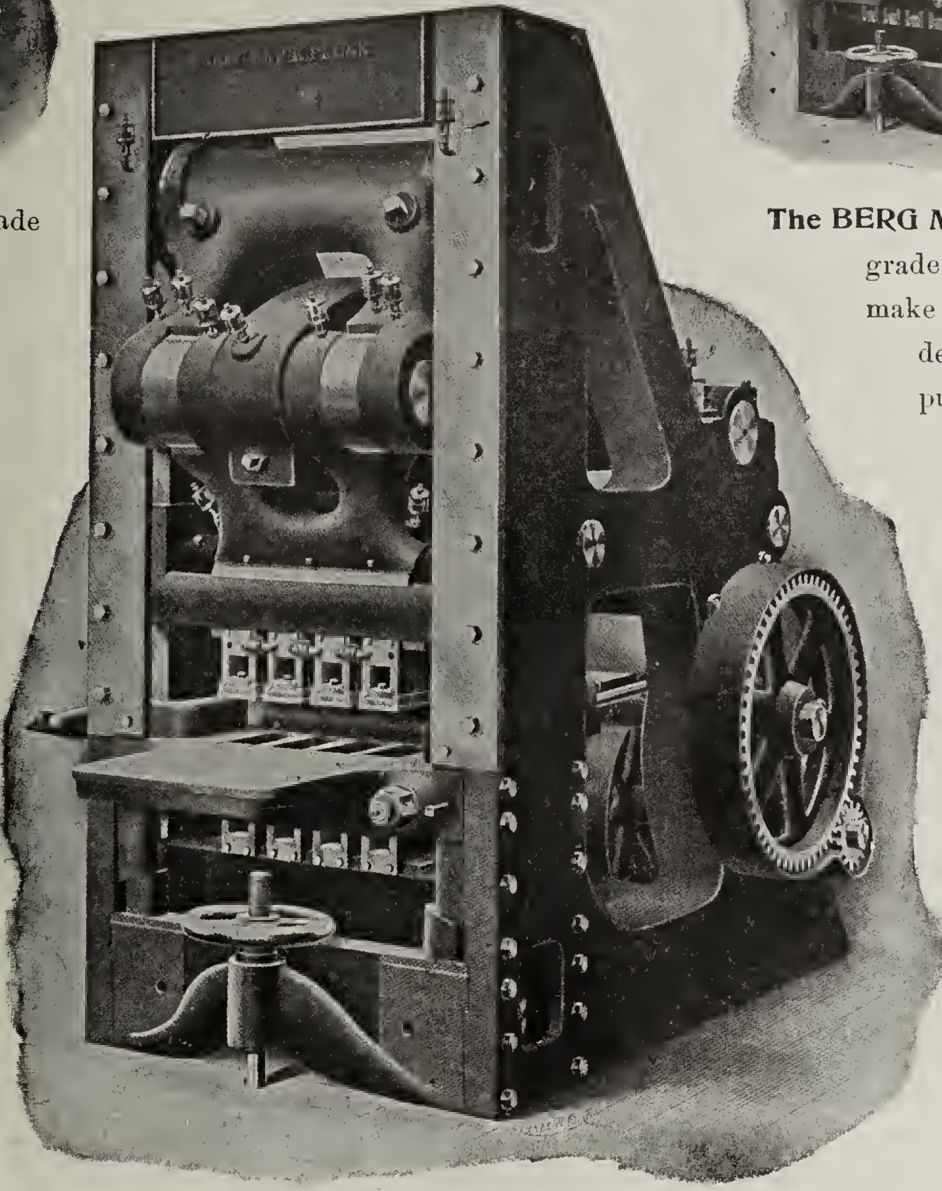
CHICAGO BRICK MACHINERY CO.
1308 GREAT NORTHERN BUILDING, CHICAGO

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

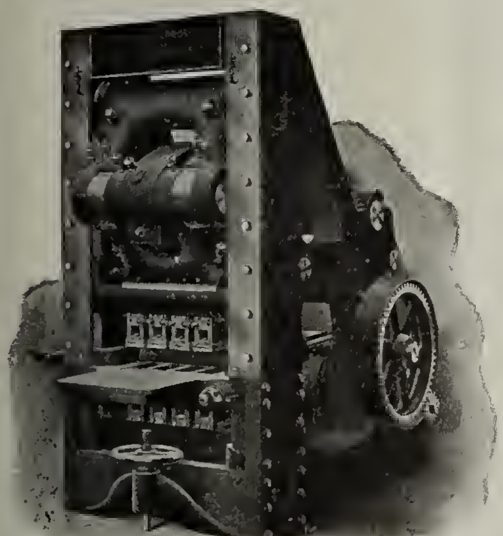
First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.



The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, exclusively. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address

A. BERG & SONS
OFFICE: MANNING CHAMBERS
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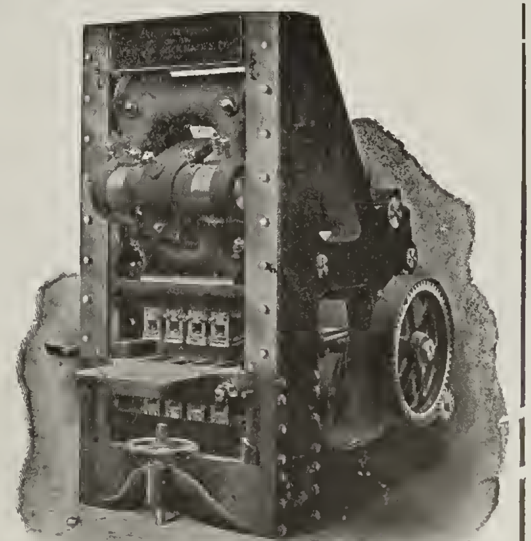
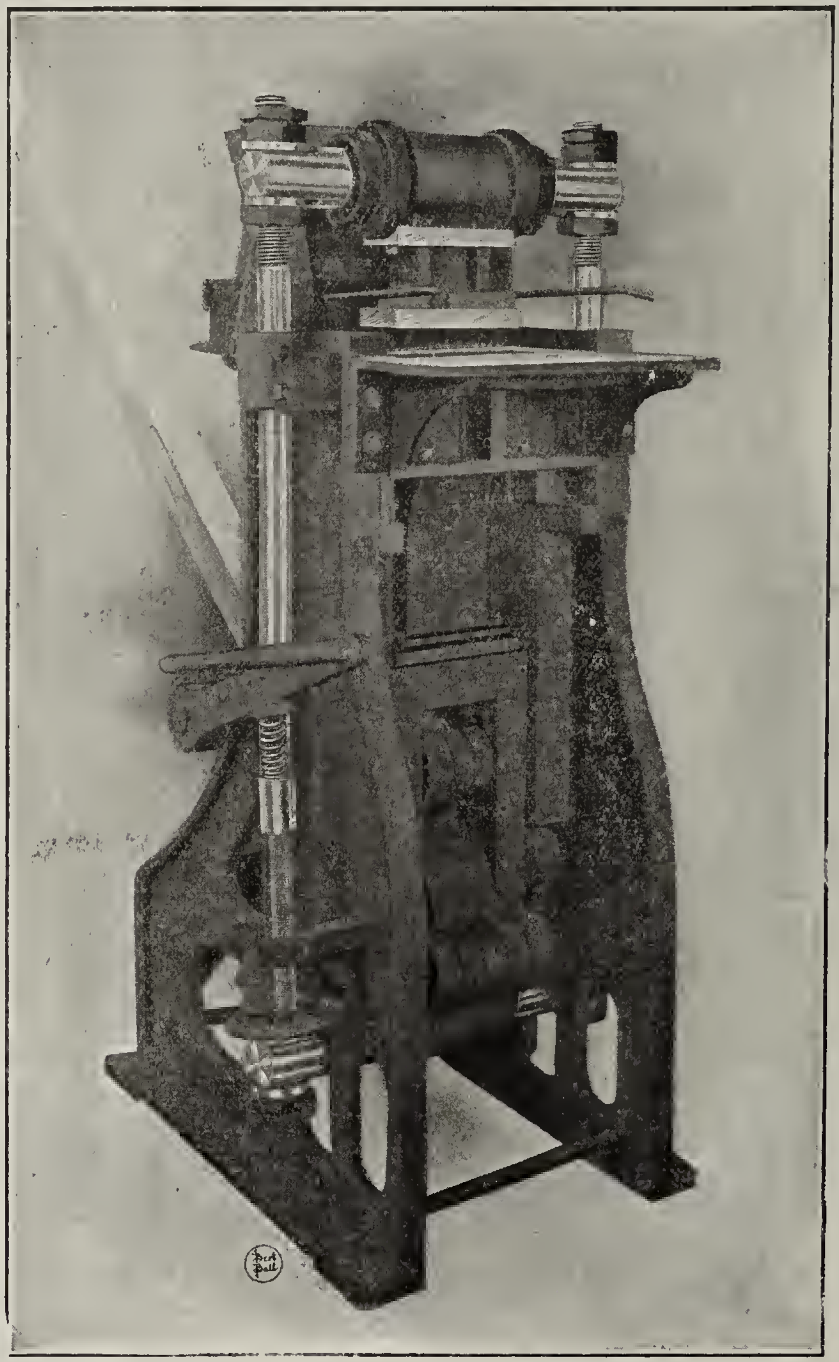


THE FERNHOLTZ BRICK MACHINERY CO.

MANUFACTURERS OF

DRY PRESSES, PULVERIZERS, MIXERS, ETC.

FOR
CLAY
AND
SHALE
BRICKS



FOR
CEMENT
AND
SAND-
LIME
BRICKS

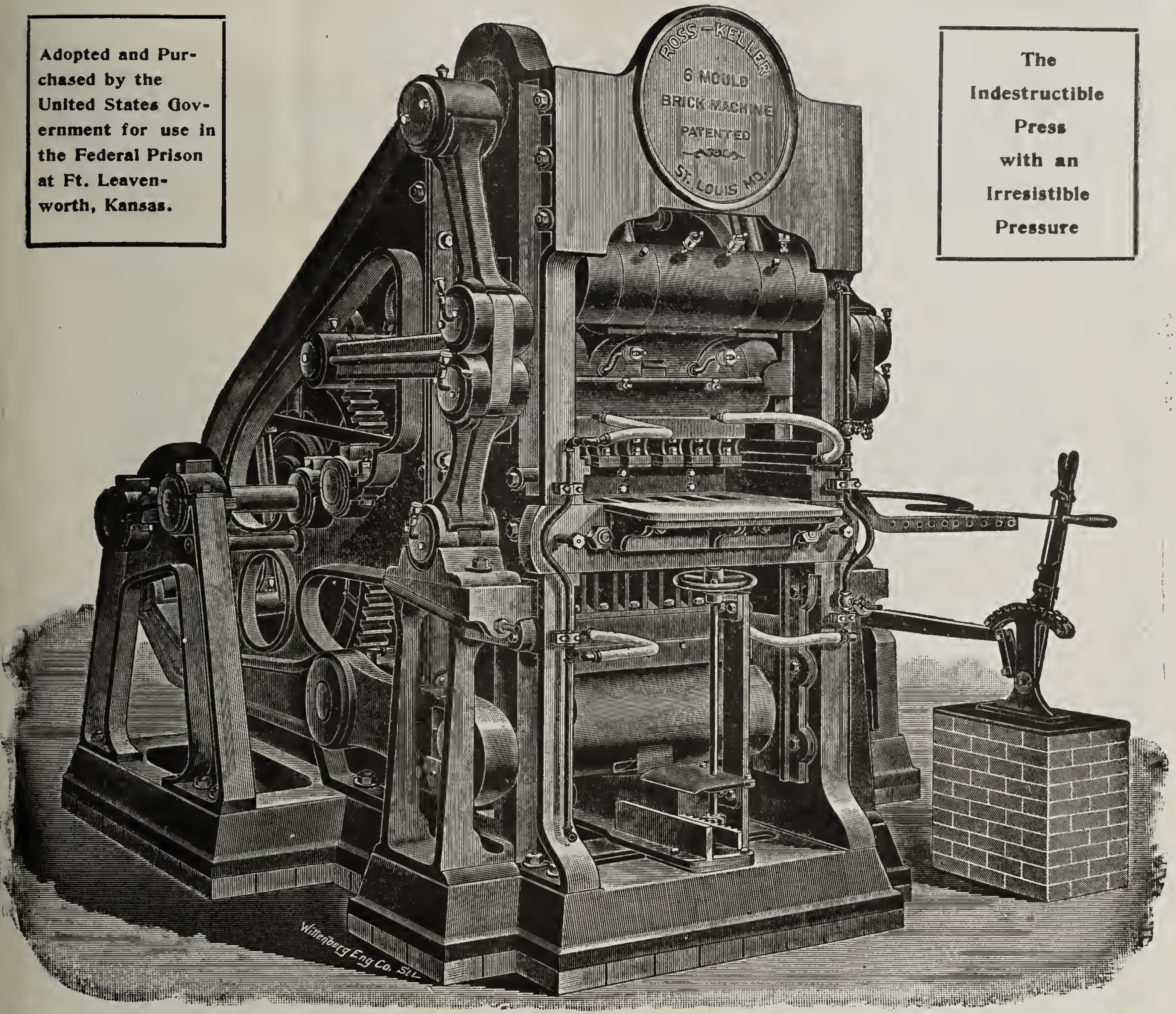
This Hand Press makes Brick equal in density to those made on a power press. Every Brick *PERFECT.* Extensively used for ornamental and special design.

The Fernholtz Brick Machinery Co.

BOYLE AND OLD MENCHESTER, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

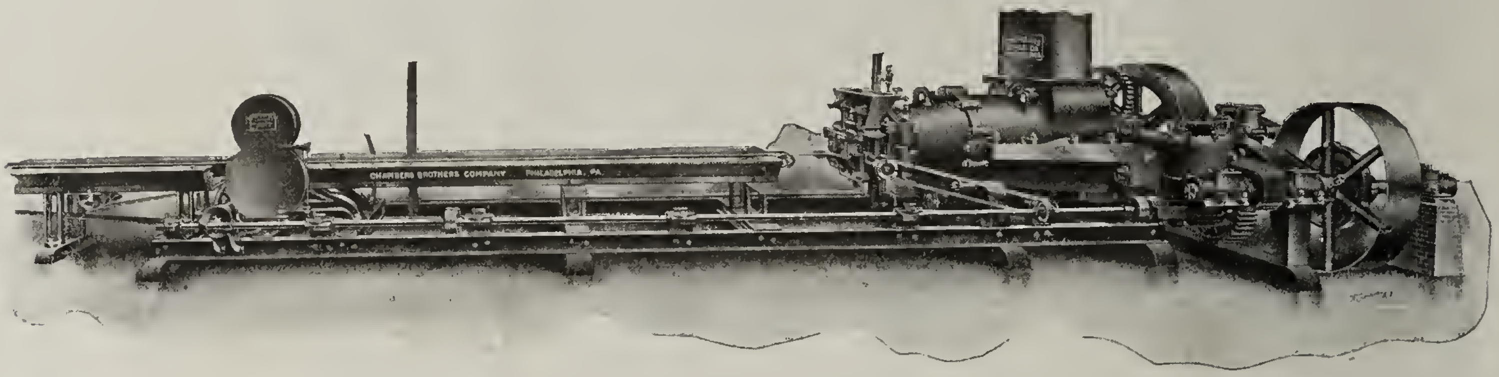
Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - ST. LOUIS, MO.

Chambers Brick Machinery


CHAMBERS BROTHERS COMPANY PHILADELPHIA, PA.

Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

Chambers Brothers Company

Philadelphia, Pa. Chicago, Ill.

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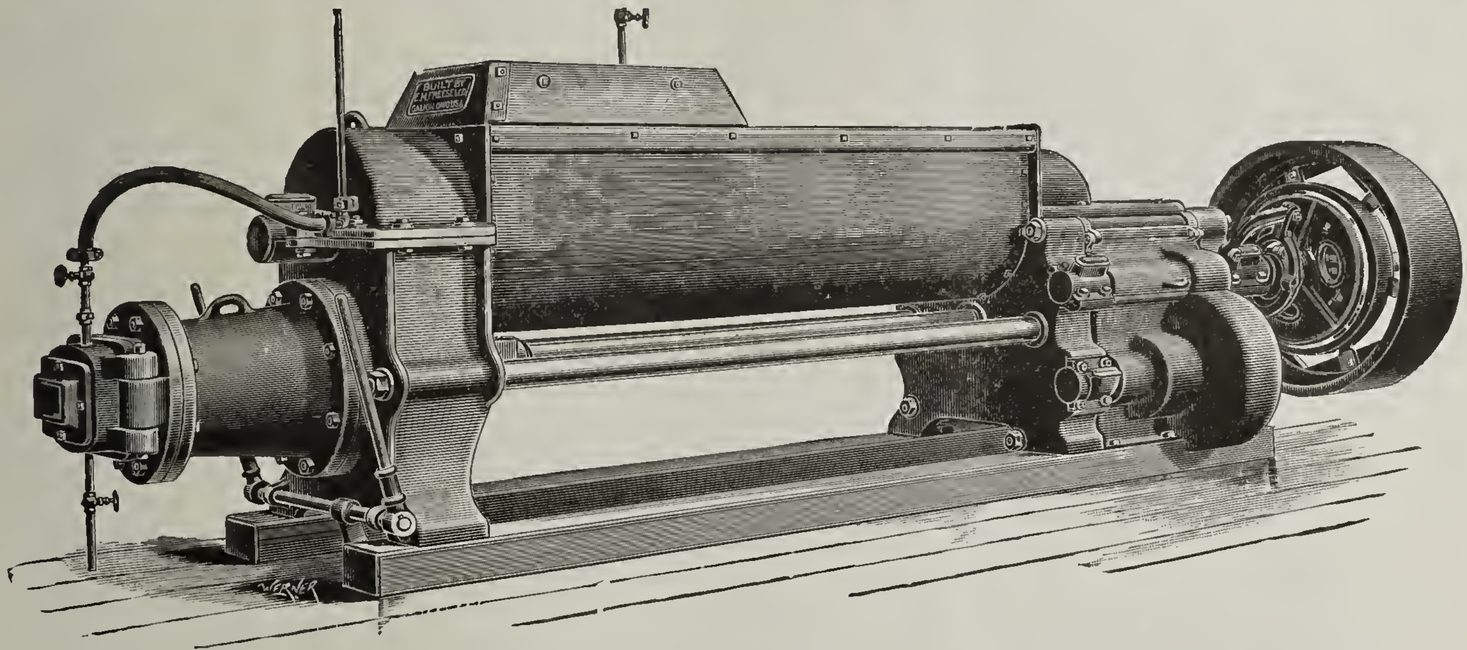

We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

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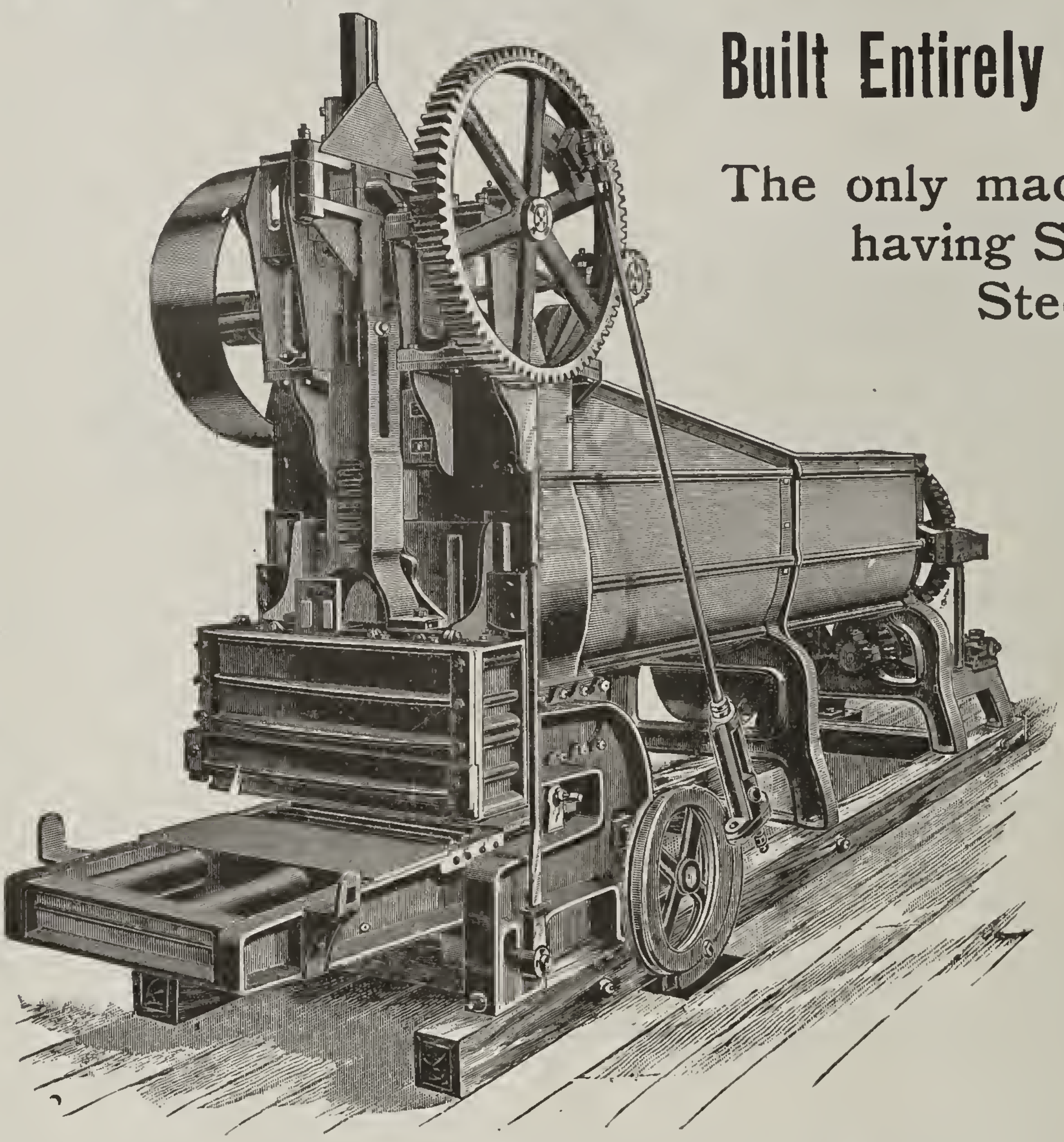
GALION - - - - OHIO

THE POTTS

HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

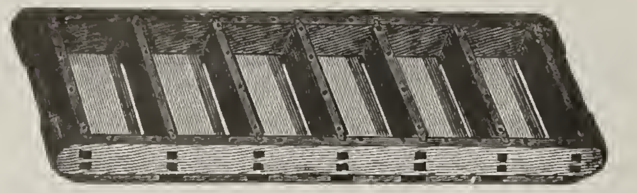
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

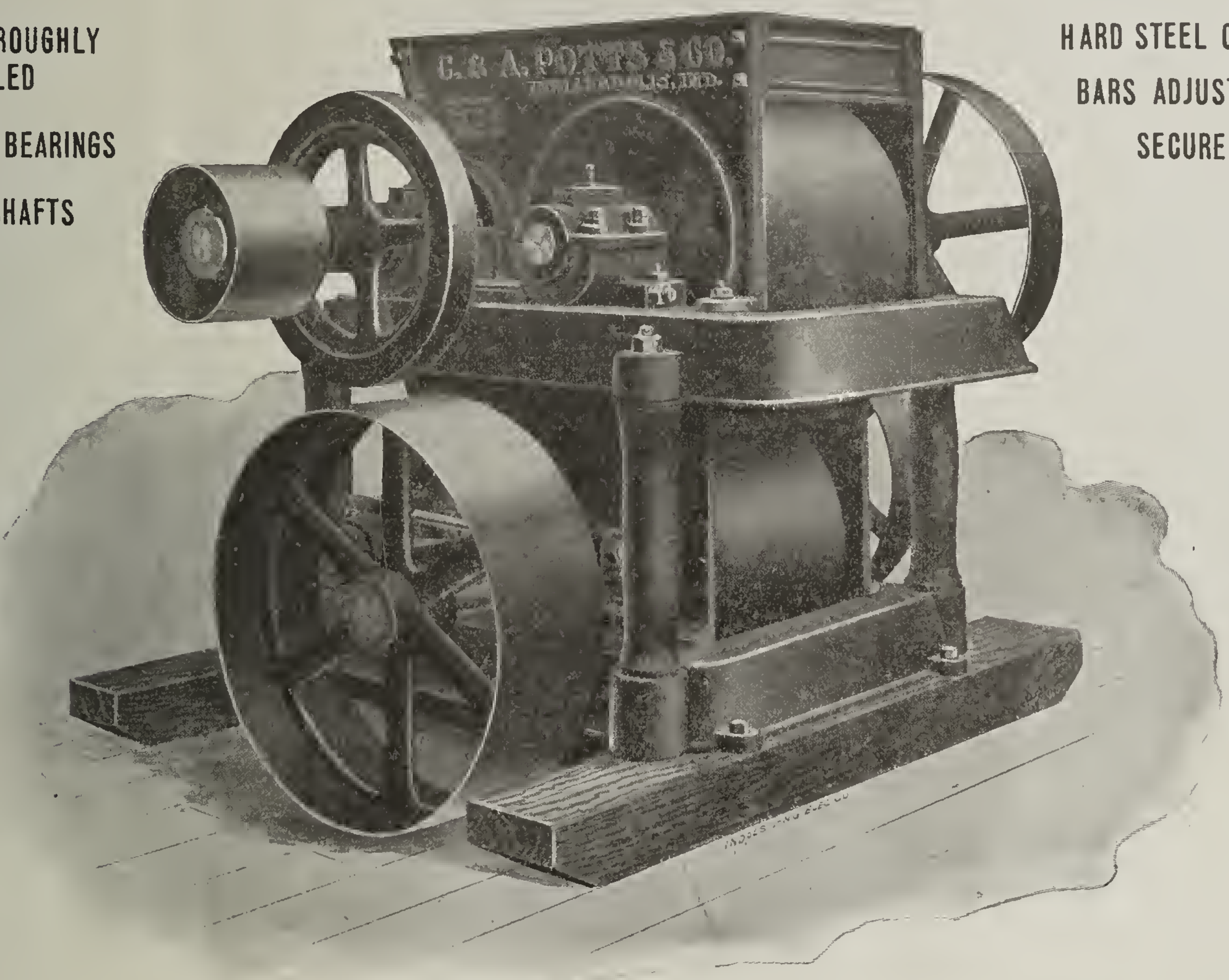
We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

Compound Disintegrators and Crushers

As Manufactured by Potts

Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.



ROLLS THOROUGHLY CHILLED

RING OILING BEARINGS

STEEL SHAFTS

HARD STEEL CUTTING BARS ADJUSTABLY SECURED

Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank.
Will not choke or clog from hard, dry or wet, sticky clays.
The MOST GENERALLY USED Machine on the market.

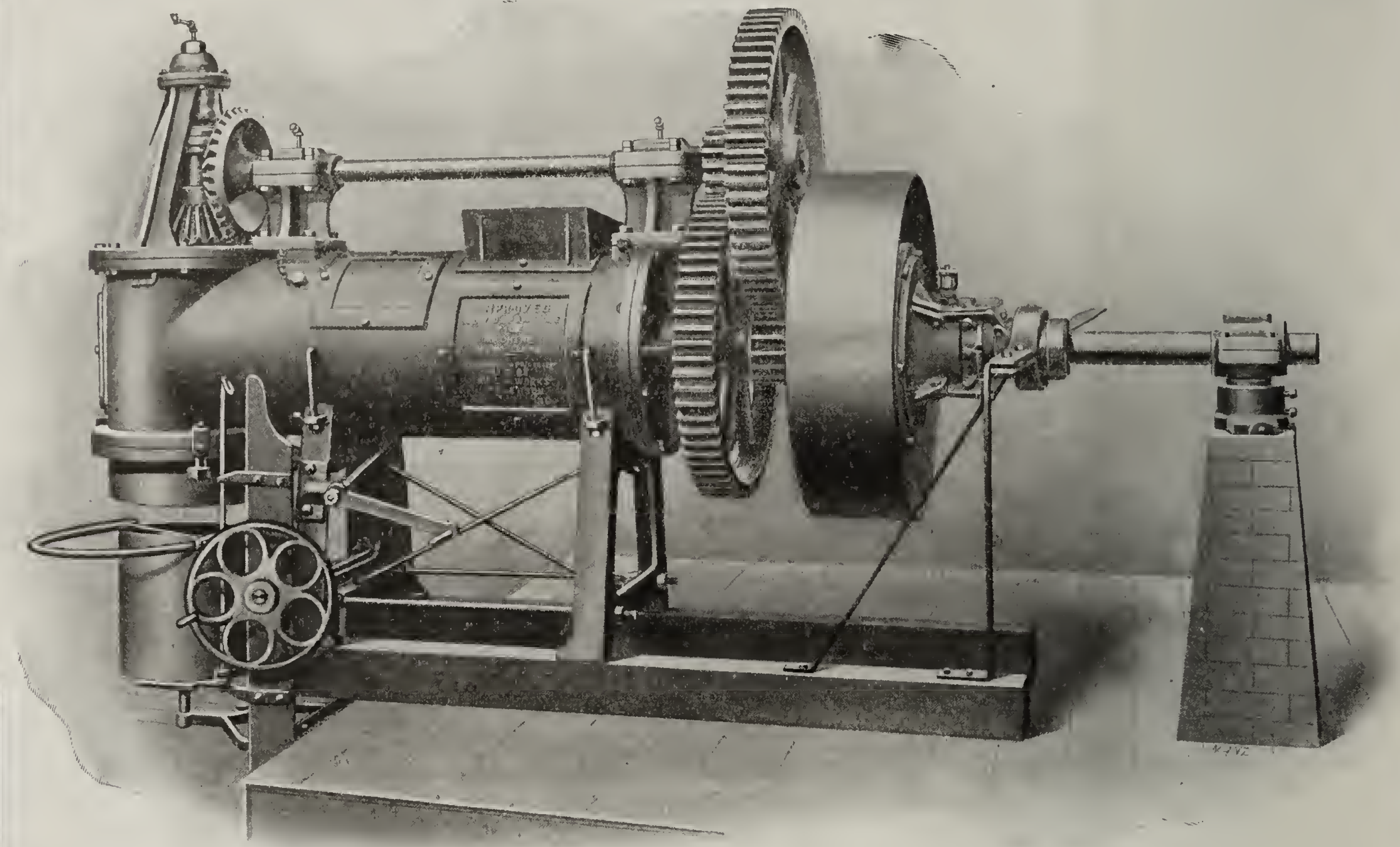
Built to Do the Work

Manufactured by

C. & A. POTTS & COMPANY
INDIANAPOLIS, IND.

1908 NEW DEPARTURE

The Only Mill for Making Successfully
Tile from 3-inch to 24-inch Diameter



Greatly improved in strength and convenience. Capacity increased forty to sixty per cent. Power required to operate forty per cent less than formerly

We also manufacture a complete line of high grade Dry Press Brick Machinery, Soft Mud Machinery, Dry Pans, Disintegrators, Crushing Rolls, Pug Mills, etc.

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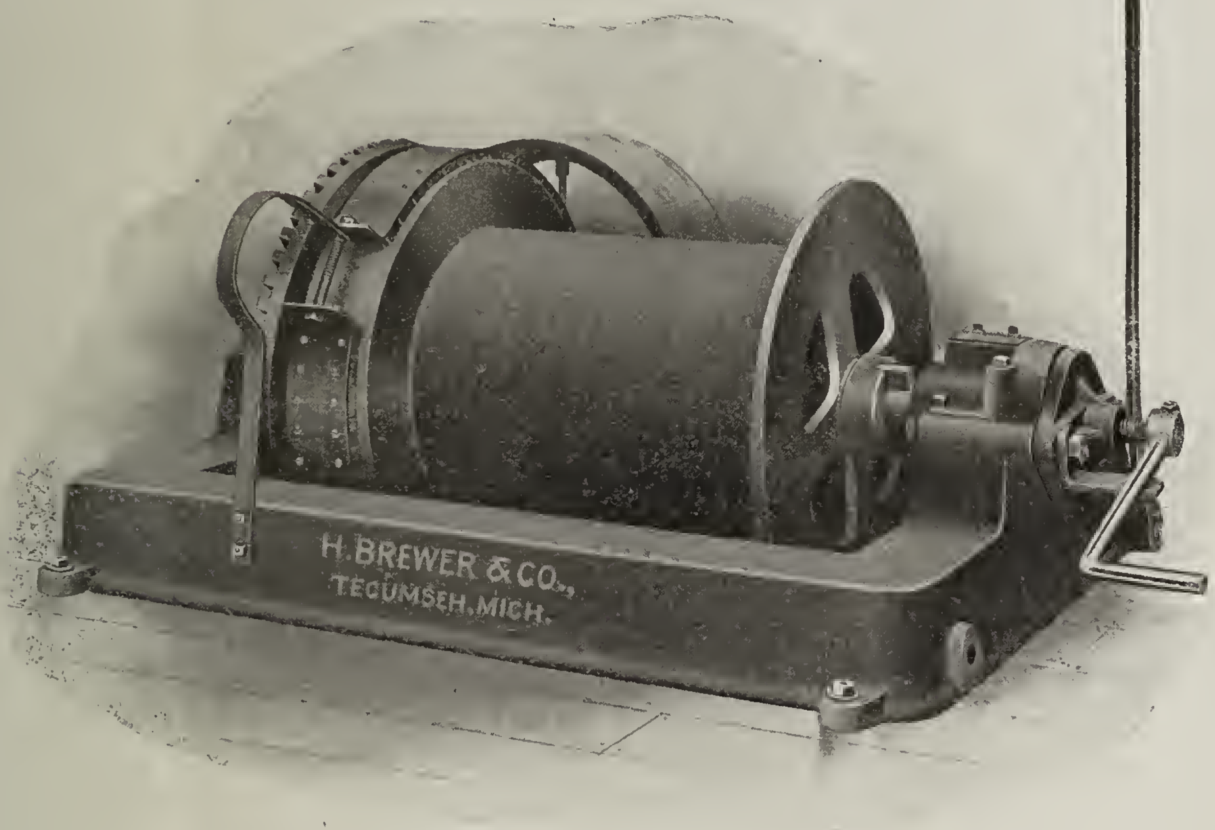
The
Anderson Foundry & Machine Works
Southwestern Office, Wilson Building, Dallas, Texas. ANDERSON, INDIANA

HOISTS

The Brewer line comprises all kinds of good Hoists, Light and Heavy Patterns; Large and Small Sizes; Spur and Bevel Geared Designs, A hoist exactly suitable to your work what ever it may be.



THE BREWER No. 28

is a large, heavy, bevel geared hoist of late design, suitable for the most severe requirements. The frame is cast in one piece. The drum, friction head and brake wheel are also cast together in one piece. The drum is 20 inches in diameter, 28 inches between flanges and the flanges are 30 inches in diameter. The bearings are self-oiling. The weight is 3000 pounds.
Get specifications of the other sizes and general catalog of clay working machines

If Marked BREWER It's Good

H. Brewer & Co.

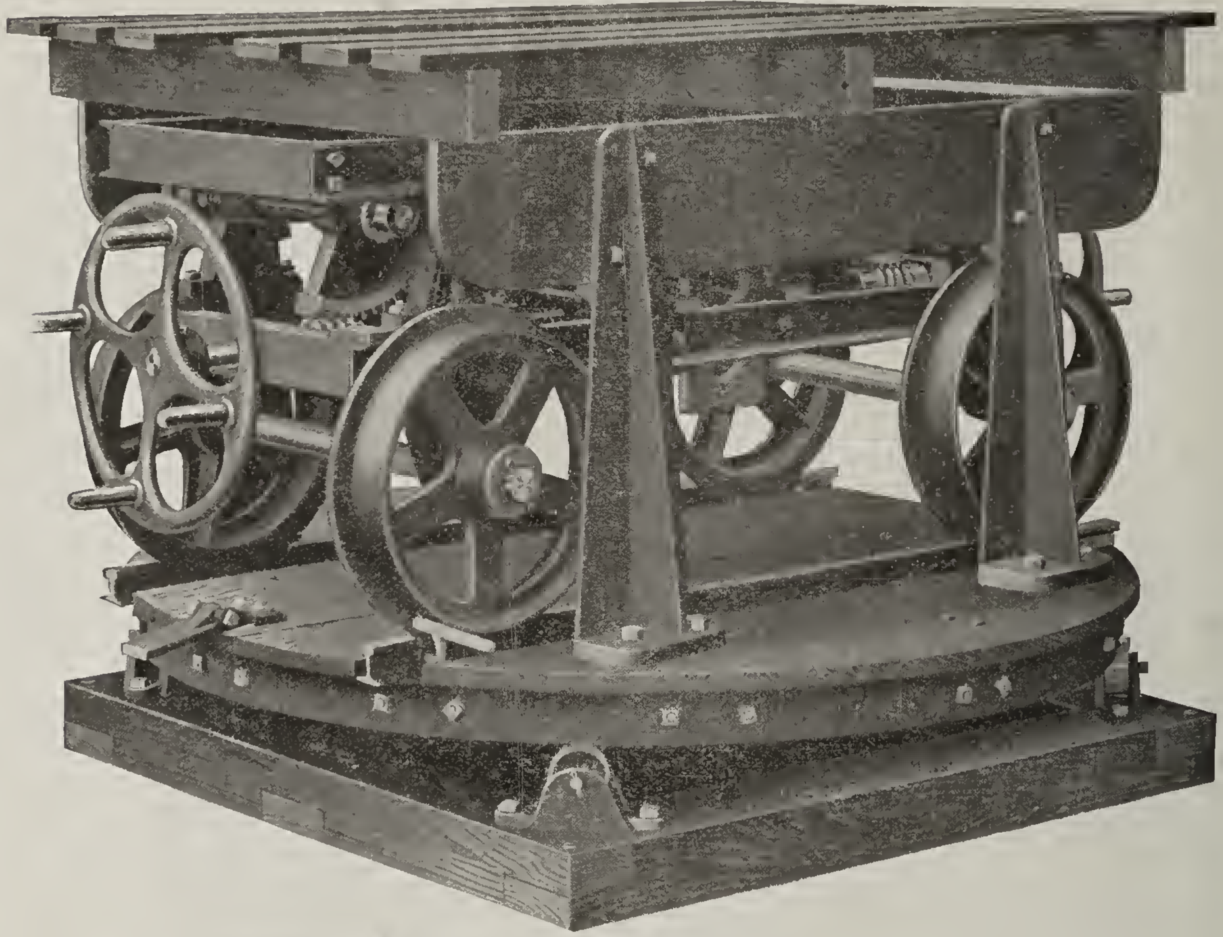
TECUMSEH, MICHIGAN

If Marked BREWER It's Good

THE GUILDER ELEVATING AND LOWERING BRICK CAR

And Turn Table Used with Same

The most perfect car of the kind made. Easy to handle. Operated from either end. All iron and steel. Raised and lowered by Worm Gear and Segment.



No Charge for plans or for the right to use this system.

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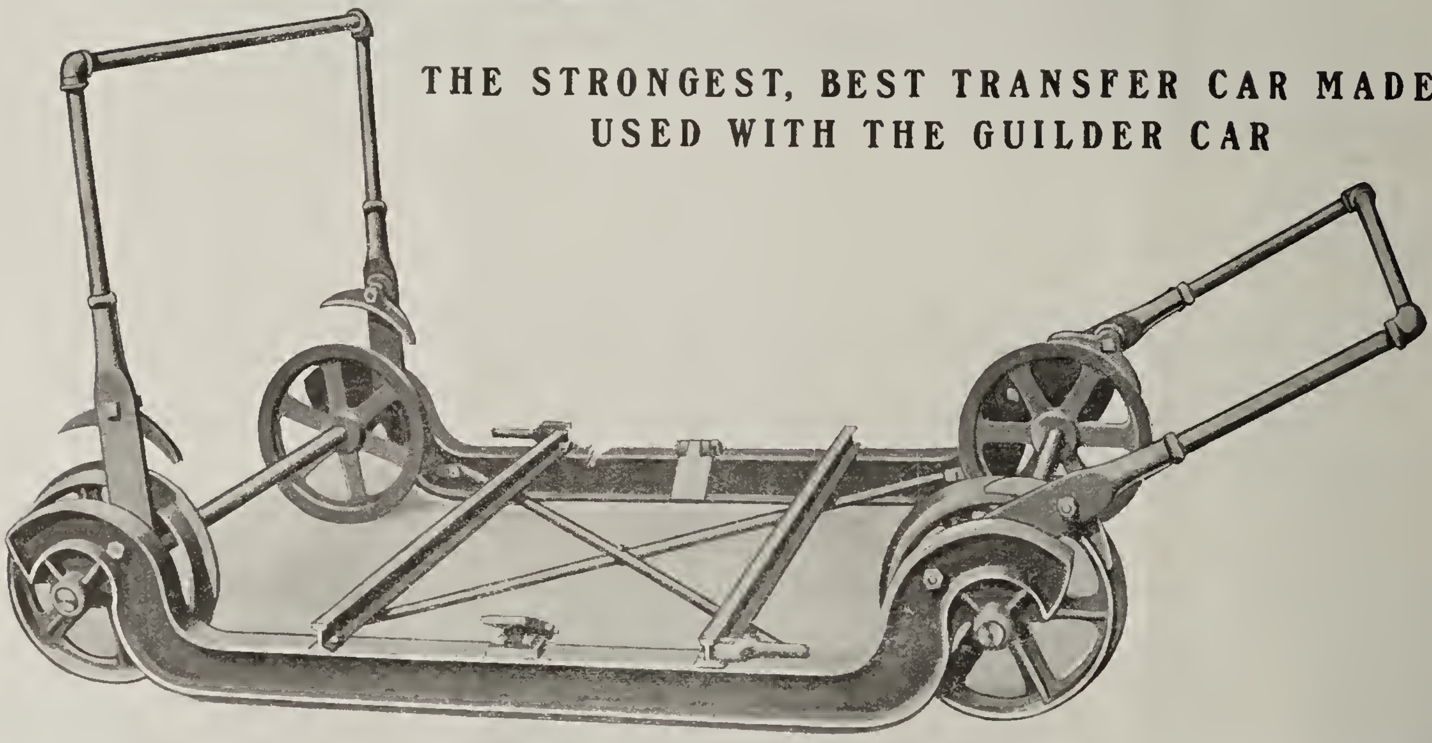
Pay only for what you get and nothing for a piece of "Blue Sky."



THE STRONGEST, BEST TRANSFER CAR MADE
USED WITH THE GUILDER CAR

Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXIV. No. 3. CHICAGO, FEBRUARY 15, 1909. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

ILLINOIS CLAY MANUFACTURERS' ASSOCIATION ANNUAL MEETING

SECOND SESSION

Wednesday, January 20th, the members failed to abide by their early morning intentions of the night before and instead of 8:30, it was 10:00 o'clock before President Hammerschmidt called the meeting to order. He introduced Mr. Martin W. Lauer, of Chicago, who was received with applause. Mr. Lauer spoke on Drumming; An Effective Sales Department; Its Necessity to Produce Dividends.

DRUMMING: AN EFFECTIVE SALES DEPARTMENT, ITS NECESSITY TO PRODUCE DIVIDENDS

Mr. President and Gentlemen of the Convention: I want to take this occasion to express my approval of the wisdom of this convention in elevating to the presiding office so substantial a member of this organization as Brother Hammerschmidt. (Applause.) I have no doubt that the members of this convention have in mind that the man occupying that chair should fill it completely, and from what I see of Brother Hammerschmidt, he not only fills it complete, but I think he could fill two of that size. (Laughter and applause.)

It is a well established fact that editors and literary men are allowed certain latitude, or certain license, or certain liberties, and I see that to-day our good friend, Hartwell, has exercises that authority, or prerogative, in printing his program. My understanding with him was that I should talk on Drumming, or Drumming Trade. I see that he has assigned to me here the subject, "An Effective Sales Department; Its Necessity to Produce Dividends." I had not intended to talk on so extensive a subject.

The relation of dividends to sales is about the relation of oxygen to water. Without oxygen there could be no water, and without sales, there can be no dividends. It is a self-evident fact that needs no discussion. We know that the volume of business is produced by the large manufacturer and not by the small one. The large manufacturer is scientific in what he does and he is as careful and as orderly and as up to date in the selling department of his business as he is in the manufacturing end. The fact that he has an extensive plant is prima facie evidence that he has attended to the selling business, and I hardly think that the large manufacturer needs any advice or needs any dissertation on how to arrange and continue an effective sales department. The achievement of his business demonstrates that he has in some measure an effective sales department, or he would not have an extensive business. There are, however, in this state, and in many states of our country, a number of small manufacturers who are up to date, progressive in every way, who attend conventions, and who are desirous of keeping in the front rank of the industry. They make every improvement that they possibly can within their means. They economize in every particular, they do not hesitate to spend money when it is a question of reducing cost and in this respect they are up to date. But from my observation there are many of the small manufacturers who are woefully deficient in one department of their business, and an essential department, and that is in selling their goods after they have made them. By the way, what I have to say will be applicable and will be with the intention of giving a few ideas to the small manufacturers. The big ones know how to take care of themselves.

Many of these small manufacturers are content to take the trade that comes to their door. They are content with a small market, with a home market, and so long as that trade keeps going and they can keep their two or three kilns going five or six months of the year they are satisfied. Now, there is no reason in the world that I can see why the small manufacturer should not change his plant to a larger one if he will but find a market for his goods, and unquestionably there is a market for his goods if he will but go out and find it.

I have in mind two or three examples of plants, one of which particularly I would like to mention to you, which will illustrate the possibility of growth and demonstrates how plant growth follows sales. This was a plant which for a number of years was a two-kiln plant. One kiln, I believe, was a 22-foot kiln and the other kiln was built before the flood. It was what we would call a Test kiln, I guess. That plant had remained stationary for years and years and it had the reputation of being run by a lot of fogies and stick-in-the-muds who were satisfied to run when there was any business and to shut down and take a rest when there was no business. About eight years ago this company had infused into it a little new blood. A young man entered that company and he enthused one of the older members until he had got them all to the point where they thought it might not be a bad thing to go beyond the locality in which they were located and sell goods elsewhere. Along about that time an opportunity presented itself whereby they could make an arrangement to dispose of a certain number of cars every year to one person. I think the number was one hundred cars. They never thought that that party could dispose of that number of cars a year. But the first thing that they knew they were snowed under with business and could not attend to their orders. It became necessary to build another kiln, and, while it was contrary to their ordinary tendency, they built the kiln. And when they had that built they found that they were snowed under again, and then they found that they had to have more capacity, and they kept on and kept on until they found that that selling business was driving them and driving them, until, when this year is completed, they will have twelve kilns and this plant will be as well organized a plant and as energetically conducted a plant as there is in Illinois or Indiana.

That plant had no more prospects than many plants of the same capacity, and the only thing which made this plant a plant of its present size and kept it from staying where it was, was the fact that they found or created the demand for their goods. It has been my thought that possibly I might be able to say something which would inspire the small manufacturer to reach out in a larger way and bring his plant up to a larger plant. To create not only a market for his goods, but a market for the goods of our good friends, the machinery men, who are always with us.

About two years ago I talked with a manufacturer who was one of these self-satisfied men. He had a sufficient volume of business to keep his plant going. The trade came to him and he did not have to go after it and he did not have to pay any particular attention to the selling. His goods went. I had occasion to be his way about the latter part of last year when the panic had arrived, and Mr. Man's plant was shut down and his yard was packed up with goods. I said, "I thought you had an established trade, and you did not have to go out and get trade." "Well," he said, "the first time in a good many years the business has dropped off and I have not had an order for some time; I don't know what to make of it." I said, "I will tell you what to make of it. You have been content to sit down and take the trade which comes to you. Now, that trade has ceased for the time being on account of this panic; but I know of plants that are selling the same products that you are that have not been content with the trade that came their way; but they have been out drumming and drumming trade constantly and persistently and thase plants are securing trade to-day. They are not doing quite the business they had, but they are running, and you would be running to-day if you had been consistently and persistently drumming trade and not been content to take what came your way."

Now, many of those plants cannot afford to hire an expensive salesman to do their selling, yet they have opportunity to do their own selling; but many of them hesitate because they feel that they are not fitted for salesmen. They get turned down, and for one reason or another they get cold feet.

Now I want to give a little information which I have tested out from practical experience to these men. I believe that the ordinary manufacturer has the ability, and if he will but follow the principles of salesmanship, acquire a working knowledge of human nature and work persistently, he can without doubt sell his goods.

Now, there are three sales essentials. The first is confidence in self. The man who goes out to sell goods must have absolute confidence in his own ability to sell goods. He must approach a man and carry with him that atmosphere of confidence. If he approaches the man in a backward sort of a way and makes an apology for coming to see him, the chances are that he will walk away with just exactly what he thought he would walk away with—that is, nothing. But the man who approaches the buyer with confidence in himself and with the avowed purpose of getting business when it can be had, communicates that feeling, without question, to the man he approaches; the buyer feels instinctively whether he is coming in contact with a dead one or a live one. I will leave that to you, gentlemen, from your experience. You know when John J. Moroney comes to see you whether he makes any impression on you. You probably know before he comes anywhere near you, that you are about to be touched by a positive current.

Next to confidence in self comes confidence in goods. You must have confidence that the goods you are selling are good goods; that they are substantial; that they will do those things which you claim for them; and you must be able to present these facts with the conviction. And the measure with which you do present these facts will be the measure with which you persuade the buyer. If you make an apology for your goods, you might as well not visit him.

The third essential is persistence—consistently keeping at it. Many men have the first quality, and they have the second quality, but they lack persistence. They fail to get results on their first visit and, consequently, they make their second visit in a half-hearted manner, and then they say, "What is the use? I can't do any business with that man. I guess I won't call on him any more." Now, as a matter of fact from my experience (and I guess it is the experience of any of the salesmen), I would say that the man whom you try to sell who tells you that he has bought goods from a certain concern for 27 years and that his treatment by that concern has been highly satisfactory and that the goods he has received have been satisfactory, that he has absolutely nothing to complain of and there is no reason in the world why he should change—that man is a buyer you want to get at. Something will occur. The time will come when you can sell him, and if you can, the other fellow will have just as hard a job working him loose from you as you had breaking him loose from the other fellow. He is worth while—is worth a hundred others, because once you have him, you have a constant buyer, while the man whose business is easy to secure is as easy for the other fellow and the chances are that the order that you get now will be but one order, and the next man who comes along will get one just as easy. You will sell him sometimes, and you won't other times. It will cost you much of what you make to hold him. But the man who is hard to get, who sticks to the other fellow—just stick to him. He is worth while.

Now, one of the greatest essentials to successful salesmanship is knowledge of human nature. The successful men in the history of our country were the men who could read men; intuitively or otherwise, but they could read men. Lincoln's great power—one source of his great power was that he could intuitively read men. He rarely made a mistake. Men to him were open books. To the successful salesman, the buyer whom he visits must be in a large measure, or to some extent, an open book. Every man has a handle. It has been said that every man has his price, but it may be so high that very few can reach him. I am not ready to accept that statement, but I do believe that every man has a handle. There is a door to every man; there is a handle to that door, and if instead of grabbing around in the dark near the hinges, finding where the door closes, you put your hand on the handle and touch that little button on the top you will find that the door will swing in. Now, not any great mass or any majority of men are readers of human nature. There are certain characteristics by which you can read men whether you are a reader of human nature or not. There are certain types of men. There are certain facial characteristics. There are certain dvelopments of the head which show their corresponding development in the face. The method of a man, his talk, his every action, his conduct, all go to show conclusively where the handle may be found.

I will describe a few of these types as briefly as I possibly can. There are four principal types of men, and for this present purpose we will show four types of buyers. The first is the seeing buyer, the man with large perception, the man who sees things, the man to whom you have got to appeal by showing him what you have got. That man is usually found with a large development of the perceptive above the eye. Our friend Hammerschmidt—you would have to show him something that you had to sell. (Laughter.) Let him look at it, let him feel it, let him examine it, let him make up his own mind as to what it is, and then if you touch the right handle on Hammerschmidt, who is a good fellow and of social nature and is friendly, and did not ever rub him the wrong way, you would not need to sell Brother Hammerschmidt, you would let him sell himself. Am I right? (Laughter.) Now, I never tried to sell Hammerschmidt. I only think of his general nature. But I am satisfied if I had some goods to sell him, unless there was some good reason, I think I could sell Bill. (Laughter.)

Then, there is the acquisitive buyer. The acquisitive buyer is the man who is after the dollar; he is after money; he is after anything that he can get hold of. But there is no use in showing the acquisitive man your goods. He doesn't care about the goods. What he wants is dollars. Go to the acquisitive man and lay down your goods and say, "Here is my line." Describe it in the best way that you know how. Talk yourself blue in the face, and the question with him will be, "Well, what can I make out of it?" He doesn't care anything about your goods, whether they are good, bad or indifferent. All he cares about is whether he can sell those goods and make more money out of them than any other goods he can handle. I think you can answer that question. You have sold him. Now, you approach the acquisitive man and put the question to him and try to get on the social side and be a good fellow—there is nothing doing. He says, show me the money. To the acquisitive man you have got to go to and say, "Here, you have got to buy these goods because you can make money out of them. What you want to do is to make money. Well, here, I have it." If you can make good on that proposition, you can make good on the acquisitive man. The predominating trait of the acquisitive man is a large development of the side of the head. He also has certain facial characteristics which show that he likes to hold and to keep. After a little experience we can tell who the acquisitive man is without any trouble. He is the easiest man to approach of all.

The next type is the reasoning buyer. He is the man who wants to have a matter presented to him so that he can see it for himself. He wants to consider the thing from an intellectual point of view. He is a man to whom you want to present your goods in a logical manner. He is a hard man to sell. There is no use of approaching his personal side; there is no use of approaching his objective side. You have got to appeal to his intellect and his intellect only. If you cannot do that, the chances are that you cannot sell him until you can. The intellectual men are the men with the thinking and logical faculties of their brain more largely developed than any other. They are shown by a development across this part of the forehead. Whenever you see that prodominant, appeal to his reason, and the chances are that you will be successful. Appeal to his social nature; appeal to his money sense, appeal to his objective powers, and the chances are that you will be unsuccessful.

There is another type, that is the social type, the good fellow. There are a lot of types of men who have about an equal balance of all these characteristics that I have described but who have predominant the social quality. There are men who are friendly to everybody. Their very personality emanates friendliness. They look good fellowship and act good fellowship. When you approach that man, he gives you the hand of fellowship in warm good shake. He is glad to see you—he is really glad to see you. Now, with that man you want to cultivate the social nature, become his friend, get chummy with him, eat, drink and be merry with him, and you sell goods to him.

That briefly gives you the main traits of salesmanship such as we find by experience are necessary to-day in drumming trade. In old time drumming you know—when means of communication were few and far between, when towns were isolated, we have a picture of the old-time drummer of rotund form, nice big fat face, like John J. Moroney's, beautifully curled mustache, silk hat, an elegant cravat with a diamond in it—a suit case in one hand and a stock of stories in the other, and we have seen these pictures galore. His comings were anticipated. He brought the news and the jokes and the life to the town; selling, with him, was a matter of form. It was understood that he would get an order, but the equivalent which he rendered were jokes, stories, good fellowship. He brought that to the town once or twice a year and he took from it business. Towns now are no longer isolated. They are as up-to-date as the larger city. They secure the daily paper. They secure telegraphic information. Many times they are in communication with metropolitan cities by interurban lines; they are strictly up-to-date. They do business on up-to-date principles and when you attempt to do business with them you have to do it on strictly business principles. The old fashioned drummer is gone, like many old fashioned things. And it is, therefore, necessary to adopt those methods and principles which are found successful at this time.

I present these ideas to you, gentlemen, for what they are worth. I hope that there may have been something in what I have said that may start the energies of a small manufacturer so that he may rejuvenate his little two-kiln plant, that he may be inspired to go out and drum trade and stick, stick, until the dreams of the larger plant shall have been realized. (Applause.)

The President: Anybody want to ask Mr. Lauer any question?

Mr. Wheat: The only thing I want to hear Mr. Lauer say that he did not say was that the manufacturer should go just a little bit farther and get after the last buyer—get after the last buyer; the man who uses the clays; the man who pays the bill; and educate him up to what he ought to buy. That is where our final volume of business is coming from.

Mr. Lauer: I don't know whether any answer from me is required on that point. I will simply say that my subject was intended to put the small manufacturer on the trail of the buyer. It is up to the manufacturer to decide for himself who the buyer is. If he does not pursue the consumer for business when he should, it is his own fault. If he pursues the dealer for business when he should pursue the consumer, it is up to him. It is up to the manufacturer to decide who the buyer is and pursue him. It is for the manufacturer to decide himself whether he wishes to pursue the dealer or the man who ultimately uses the goods.

The President: The next subject is The Gas Producer: Its Application and Requirements. I have the honor to introduce Mr. Frederick W. von Oven, of Aurora, who is a mechanical and civil engineer and a specialist in gas producer installations. (Applause.)

THE GAS PRODUCER AND ITS APPLICATION

The need of a more perfect combustion and a higher temperature in furnaces, better economy, uniformity of process and more continuous operation than obtained in hand-firing of coal, led to the development and use of gas producers and producer gas fired furnaces.

The first attempts at producer construction did not produce a generator that embodied all of these essential points in their highest efficiency, but they did bring about more perfect combustion, higher heats and more uniform processes. The development along the lines of economy, continuous operation, .reduction of labor and better gasification of the fuel have been of comparatively recent origin; and the better types of producers of today show a marked improvement over the old Siemans type, which was one of the earliest, most substantial and workable kinds. Some of these old producers, possibly with slight modifications, still exist in active operation. These old types are slowly but surely being replaced with modern units. Decisive chemical tests of the gases from old type producers, for quality, quantity and kind of gases show conclusively that their operation is an expensive luxury.

The old type of producers were generally constructed in the form of a brick oven of rectangular shape with an arch sprung across the top, which also contained one or more opening for the shovelling in of the fuel. The producers were provided with blast pipes for air blowing only. Some were provided with grates and others without; the grates with poor coal that clinkered readily, proved to be one of the greatest draw-backs to the more general use of producers in the earlier stages of gas producer installation; in fact, some prejudice is still evident . Thus the improvement to remedy these failings of the earlier days have led to our present types, which generally consist of a cylindrical steel plate shell, contracted toward the bottom edge, and which extends into a basin in the foundation filled with water. The shell is supported on cast iron legs which rest on footings. A number of sight holes are placed along the circumference of the shell, about three feet above the water level of the ash pan, so that the attendant can watch the zone of combustion and correct any irregularities in its operation. The shell is lined with a nine inch wall of hard fire brick; the space between the back of this wall and the shell is filled with fire clay, brick chips, etc.

The top of the producer is covered with a shallow open cast iron pan filled with water. Through a central opening an automatic feeding apparatus delivers the fuel to the interior of the producer. In hand-fired types, the top plate has as many as three openings for the insertion of the fuel. The water in the top plate as well as in the ash pan forms a water seal, making it impossible for the gases to escape It also keeps the top cover at a reasonably cool temperature, preventing warping and burning out. The water in the ash pan serves to disintegrate a clinker and allows a more uniform removal of cold ashes and clinker.

Just above the ash pan and placed within the producer and generally in the center is a Tuyere of mushroom-shaped top, through which a mixture of air and steam is blown uniformly over the interior of the producer. The blast is controlled by an injector, which controls the proportion between the steam and air at all pressures.

"THE MAKE" of the gas is entirely controlled by the adjustment of a ¾ in. steam valve.

The above is briefly a description of a producer primarily for heating purposes, such as will be of interest to the clayworking trade. There is a distinction between the producers for heating purposes, and those for power. Those for heating purposes are practically all of water seal, ash pit construction, and use bituminous coal, while those for power purposes generally have grates and use hard coal almost exclusively. The soft coal power producer has as yet not been fully developed.

For heating purposes the gases from the producer do not need "scrubbing" as in case of power equipment, the gases being piped through flues directly from producers to furnaces.

The ideal producer for use in heating or melting purposes should produce the following results, namely:

1. Complete gasification of the fuel with a minimum amount of carbon in the ash.

2. Delivery of gas both uniform in quality and quantity and continuously.

3. Gas to contain the minimum amount of nitrogen and carbonic acid gas.

4. Continuous operation meaning continuous automatic feeding of fuel; continuous automatic disintegration of clinker and removal of ash and clinker, resulting in no stoppages for cleaning, repairing.

5. Reduction of labor to a minimum amount per ton of fuel gasified.

COMPLETE GASIFICATION: This means the conversion of the entire fuel into hot gases and cold ashes, which should not contain over 1% of carbon originally contained in the coal.

DELIVERY OF GAS: In order that this is performed the process of distillation and oxidization must go on continuously and uniformly. There can be no period of dumping and poking to distribute a fresh supply of coal on the bed of fuel in the generator. An increased charge of fuel chokes off the gasification and consequently reduces the capacity of the producer for the time being. Hence a uniform thin scattering of fuel should be placed over the bed of fuel in the generator, and in a continuous manner, and at a specified rate, which never should change unless at the will of the operator. After this manner a definite uniform depth of fuel is kept above the fire zone, which promotes a uniform distillation of the volatile matters in the fuel, and also keeps a uniform supply of fixed carbon in the oxidization zone.

MINIMUM NITROGEN AND CARBONIC ACID GAS: Both nitrogen and carbonic acid gas are inert gases and useless for combustion. The latter indicating a burning of the gas within the producer. There should never be over 50% of nitrogen and 4% of carbonic acid gas in the gases from a good producer. Old types have shown as high as 60% nitrogen and 12% carbonic acid gas, which means a loss of 10% to 15% in efficiency.

To overcome the formation of an undue amount of carbonic acid gas and promote the more rapid gasification of the fuel, the latest types of producers are being divided on horizontal lines into two or more sections, one or more of which are made to revolve so as to shear the fire zone and thus keep the hot coals under a slight rolling motion, preventing the formation of clinker and reducing the possibilities of channels through the hot coals, in which the gases are liable to burn and thus form the undesirable carbon di-oxide. Only a few of this type of producers have been put into operation, but results up to date on their operation show a decided increase in the gasification per square foot of producer area, as well as an excellent gas-making proposition.

CONTINUOUS OPERATION: This depends upon a continuous uniform feeding device as well as a uniform drawing off of clinker and ashes. The fuel when fed uniformly, permitting a thin uniform fire of constant level, confines the formation of clinker to a minimum space. Any clinkers formed are softened and broken up as they descend against the upflow of air and steam from the blower beneath. With poor fuels, high in sulphur and fusible ash, clinkers should not appear in the ash pan any larger than the size of large egg coal, and these can be readily removed with the ashes, causing no disturbance to the continuous working of the producer. In some producers with grates or without waterseal bottoms, clinkers have formed which defied ejection, necessitating a shut-down and a thorough cleansing out. The automatic discharge of clinker and ashes is best performed by a plowing device in the bottom section of the producer, either with the plow revolving and the bottom section remaining stationery or vice versa, in such a manner the ash and clinker are forced to the exterior and into conveyors for disposal. This operation is uniform and continuous, the speed like the feeding device being entirely controlled by the operator.

Reduction of Labor: The improved methods for putting coal into the producer and the removal of ashes and clinker from the bottom together with the other devices which reduce the poking of coal to a minimum, all lead to a reduced cost of gasification per ton of fuel. Where fuel is still shoveled into the top of producers, considerable poking is required to distribute this fuel over the surface of the fuel bed within the producer as well as breaking down the surface of the fuel bed to keep it as uniform as possible. This poking is not only a hard, hot job for the attendant, but it necessitates the loss of more or less gas.

If the ash and clinker are removed automatically under water-seal and coal is delivered from hopper over head, the labor is such that one man per shift of twelve hours can ordinarily with a fair quality of coal, look after a battery of three ten-foot producers of the latest type, each of which are capable of gasifying from 5 to 10 tons of coal per twelve hours, depending upon type of producer.

The development in the producer line during the past few years has been largely along the lines for economical operation, increased gasifying capacity and at the same time with the idea of producing the best gas results. Some producers embody many good features, that have been tested out and performed satisfactorily. Others seemed to have overlooked many vital points in the construction, and have not made much progress or improvement over the older original types. Thus there is ample room for choice of the buyer and an opportunity for ability in the selection of the best producer installation for any particular purpose.

The various lines and processes to which producer gas is daily in active operation to a greater or less extent may be quoted as follows:

1. Melting of steel.
2. Heating steel preparatory to rolling.
3. Melting of glass.
4. Roasting metallic ores.
5. Distillation of zinc.
6. Firing of furnaces, making electric light carbons.
7. Firing of muffle and melting furnaces in the manufacture of enamel ware.
8. Firing of lime kilns.
9. Firing of furnaces in forge works.
10. Drying process in beet sugar manufacture for drying pulp.
11. Firing char kilns in glucose refinery.
12. Firing rotary kilns.
13. Firing kilns for clay ware, mostly applied to the continuous type of kiln.

The first three items mentioned above indicate the fields in which gas producers have been used to the greatest extent both in this and other countries, in fact nearly every steel and glass operation in which there is melting or heating, the gas producer is a necessity. Some of the other lines mentioned above have had only occasional installations here and there, however, with success. The field for burning Portland Cement clinker will be one of the largest just as soon as the newest type of mechanical gas producer has proved itself. Volumes might be written on the application of producer gas to each and every one of these different lines of application, however, it is worthy of note that some of the propositions enumerated in the above as the firing of lime kilns, the furnaces in forge works, char kilns in glucose refineries, which were thought absolutely impractical have been done with the greatest success, showing a saving of from 25 to 40% in fuel, and generally with a percentage of increase in the output of the kilns or furnaces. The installations for burning clay ware have not been numerous, and although first-class continuous kilns have been advanced generally, their efficiency was not of the very best, due to the application of an inferior class of gas producer, which did not operate satisfactorily on the fuel at hand.

Gas producers can be applied to the ordinary clamp kiln for burning brick, or to a modified design of round kiln, however, the square kiln is more adapted, due to its convenience with the arrangement of gas and waste air flues necessary in gas producer installation. The entire success of such a proposition rests not only with the gas producer, but with the distribution of the gas into the kiln and throughout the same, and the proper admixture of air to the in-flowing gas at the proper points for the best combustion. The utilization of waste heat is for heating the air which is lead to the in-flowing gas which increases the efficiency of the kiln and reduces the amount of fuel consumed. With the round or square type of kiln, the best arrangement is such that these kilns be arranged in a row or straight line, with the producers at a convenient point midway, the length feeding the gas through flues to each and every kiln, each one of which can be independently cut off entirely from gas service. All of these kilns should also have a take-off for waste gases; these waste gases being drawn off by a blower at the end of waste gas flue. The air used in the combustion of the gas in the burning kiln should be pre-heated through the kilns which are cooling off. In this way the waste heats are more or less fully utilized. It is said that from seventy-five to ninety per cent of all the heat put into a kiln is wasted, and I dare say that with an installation properly put in under the above general arrangement that fully forty per cent of the fuel bill will be saved. In other words, the saving is in the utilization of the waste heat. This arrangement for round or square kilns, of course, is not as thoroughly economical as in the continuous kiln, where some or all of the drying and all of the water smoking is done by the waste gases, and the air for the combustion of the gases is pre-heated in the several previously burnt chambers. Thus the continuous kiln is the ideal proposition for the application of producer gas, although it is not an overly attractive proposition for the ordinary clay-manufacturer. The problem of working out the application of producer gas to the round and square kiln, and having these kilns placed properly for the greatest efficiency in operation is bound to come, and the saving to be made in the operation of such a plant will depend largely upon the cost of coal per ton at the plant. If coal is worth $3.00 per ton, it is safe to say that such a plant would pay for itself inside of two or three years. The saving of any producer plant properly applied is always from thirty to fifty per cent in the fuel. It further gives a more uniform product and a greater output to the kiln.

The question of fuel is one which all of the clay-workers no doubt are really interested in, especially in this State, as we have such a variety of soft coals. For the gas producer the best coal to buy in any locality is that which by analysis or test shows the most heat units for a dollar, providing the sulphur does not exceed 4% and the ash does not run too high. A coal high in sulphur and ash, especially fusible ash, is a difficult one to gasify, and should never be recommended, because the process is one of oxidization as well as distillation. It is usually best to use run of mine, crushed at the shaft to pass a 4 in. ring or mesh. This grade can be obtained at the lowest price. It rarely if ever pays to use slack coal; some thinking it lower in first cost are, however, in error as the capacity of the producer is cut down and the blast must be driven at high pressure in order to get it through the fire. This results in an over-heated gas, which is liable to burn. The smallest plant to be operated with a producer should be where ten tons of coal are required per twenty-four hours. The saving under this would not be as large as where thirty to fifty tons are used per twenty-four hours.

As determined in previous installations in other lines, the same will be true in the clay-working branch, that gas firing is much superior to the direct firing of coal in the kilns. *First:* because of the attainment of a perfect combustion and the requisite heat. Fuel in the gaseous form burns quickly and perfectly; burns without smoke, and any desired temperature can be reached and maintained. *Second:* economy of fuel, as gas firing permits the restoring of a large part of the waste heat to the air and gas before they enter the furnace. *Third:* the burning or heating is going on uniformly and continuously; the gas is generated similarly, and there are no fluctuations, as the rise and fall of temperatures, as in the case where fuel is hand-fired, to say nothing about the cleaning out of fires, during which times the furnace cools, and the burning retarded. *Fourth:* saving in labor, as all the coal is generally handled at one point, and generally by mechanical means, and the gas is distributed over the plant instead of the coal. It is safe to say that gas installations for twenty tons for twenty-four hours should pay for themselves within two years, and that the wear and tear on the plant is so little as to be a negligible factor in the operating expense.

A first-class gas producer properly operated delivers into the gases fully 90 to 92% of all the heat energy of the coal, and it is easier to operate a gas producer right than to operate it wrong. The one thing to be impressed with is, that the greatest portion of the saving is in the utilization of all the waste heat properly applied. (Applause.)

Mr. Mamer: I would like to ask, why do you say that it would be more convenient to use the gases to a square down draft kiln than to a round one?

Mr. von Oven: For this reason: Take for instance in a series of four or five or six kilns placed in a straight line with a producer installation about midway its length—the gas flues, as well as the waste heat flues run the full length of the line of the kilns. In order to pipe the gases and take the waste heats to and from each kiln, the rectangular outline with the customary bag walls are of greater simplicity in applying flues to an old series of such kilns, as in case of the round ones the gas must be applied to a great number of points along the outer circumference. However, round kilns can be applied with producer gas, although it is preferable to build such kilns especially for such an installation as the bag walls, and the floors must be constructed with a view of being properly constructed for the inlet and combustion of gas. The bag walls should form a continuous chamber on the inside. Below the floor of the kiln, slots are required all the way round to distribute the gas uniformly and back of the bag walls. The piping of the air for combusting the gas, and which is preheated in the previous kiln, must also be applied at the proper point between the bag wall and the wall of the kiln in the proper quantity. These are all mechanical determinations, and a matter of more or less experience for different types of kilns.

Mr. Powell: How much saving is there supposed to be in gas where hot air cannot be used for igniting the combustion?

Mr. von Oven: It is a hard question to be determined without looking into the fuel that you have at the place or what the coal costs at that point, but ordinarily speaking, there is really very little saving in firing producer gas in a furnace if no waste heats can be utilized, but you get better results, also quicker, more uniform results, i. e., a greater output for the furnace. It is easily understood that if in any furnace a continuous fire is placed, which increases continuously—as in the kiln—to the highest temperature desired, that you are not losing any time between the fires, as in hand-firing, and that the kiln will be burned more rapidly and more uniformly, and, of course, saving in time, to a certain extent, is a saving in fuel.

A question was asked me the other day: What could be done in the way of heating boilers with producer gas and what could be done with the waste heat? You can burn slack coal on chain grates with very great economy in most places, and the waste heat from such an installation can be used in the economizer for heating water, etc., and thus it could be used to advantage on ordinary chain grates, although it could be used for preheating the air for combusting producer gas under these same boilers, the installation of producers under boilers would be a larger first cost item, than the chain grate installation, although I fully believe that producer gas installations once applied would be a trifle more economical in fuel, produce increased steaming capacity and greater uniformity of heat, cleanliness of the escaping gases, and especially if they were to be used for preheating purposes of any nature. The worst feature against the installation of producers for steaming purposes is that the first cost is a trifle more than chain grate, and this seems to be a prohibitive feature.

In any furnace where the waste heats can be utilized, producer gas is the only proposition because it has shown itself time after time to make most excellent savings, and the more common installation of producers is bound to come, and they will be installed in places where to-day they seem to be an impracticable proposition, and the kilns for burning clay ware to-day offer the greatest inducements for the installation of producer gas.

Mr. Mamer: Do you mean to say that a producer will develop 90% of the volatile matters in gas?

Mr. von Oven: Take the total heat units in a pound of coal: It will deliver into the gases 90% or a little over of such heat energy for actual service.

Mr. Mamer: Would it not be liable in any flues for tar deposits to take place?

Mr. von Oven: If the producer is regulated carefully and properly, there is very little possibility of this taking place. You can regulate the make of the gas with a steam valve, so that the gas is either not too hot or too cold. You understand that the hydro-carbons if too hot are liable to be broken up and then deposited as soot. To effect a riddance of these features all producer installations generally put in compressed air systems for the burning out of soot and tar, and this is done once a week or whenever deemed necessary, and it only takes a few minutes to do this.

Mr. Mamer: That is in case whether it is tar or soot.

Mr. von Oven: Either one; it does not make any difference; it is burnt out. These tar and soot troubles used to be some of the most difficult features in producer gas firing. I know of one party who put in a gas producer plant of the old type with grates in the bottom of the producers, and spent about $30,000 in the installation of this plant, and the operation was discontinued on account of the clinker formed and the tar in the flues. Coal could be had very cheap at this point, and the poor coal seemingly worked all right, as far as the kiln gas was concerned, but the terrible clinkers were produced, and when the proper coal was used, so that no clinker was formed, they had trouble with the tar in the flues. In other words, they could not control the make of the gas, as they were getting it either too hot or too cold, and the producers were not working right to start with.

Similar experience of this nature has led to more or less prejudice—yes, a great deal of prejudice against producer installations. The party of whom I speak now, however, views the modern gas producer installation as invaluable. The new steel plant at Gary, Ind., has 152 of the latest type of gas producers installed for open-hearth processes. This same company, I understand, has just recently placed an order for 50 or more mechanical producers of the type where the coal is fed into the top automatically, and the ash is taken out mechanically from the bottom.

Mr. Mamer: They are also using the gas from their furnaces.

Mr. von Oven: Yes, from their blast furnaces. That is ordinarily a waste gas that comes from the blast furnaces, which, however, is scrubbed before led to the gas engines, where it is utilized for power. At Gary, Ind., only open-hearth steel is produced; the blast furnace gases are utilized for power purposes, and the producer gas is used entirely for heating and melting purposes, in the open-hearth furnaces. The waste heats from these furnaces being utilized for preheating the producer gas and the air for combusting the same within these furnaces. They have found that the only way to burn coal for these furnaces is through the gas producer.

Mr. Mamer: As I understand it, in the melting of steel in the open-hearth furnaces the air comes in from one side and is passed through and out the other, and then passes through a regenerative furnace.

Mr. von Oven: Melting steel and heating steel are two different propositions. In melting steel they have an open-hearth furnace, in which they alternate the gases and air from different ends. However, both air and gas prior to reaching furnace are preheated in the regenerative chambers. In the heating furnaces the billets or slabs are only brought up to the proper heat for rolling, in which case the air only is preheated; but in melting both air and gas are preheated.

The President: Mr. Barr, have you any questions to ask Mr. von Oven?

Mr. Barr: No, it is too deep for me.

Mr. Lovejoy: I am very much interested in this subject, but I am not an expert on the line of gas producers. Mr. von Oven has produced an excellent paper here and given us a great many ideas. He certainly has made some very startling statements which we hope will be verified in the use of the producer. I know that the gas producer is coming in for power, but it is a question whether the use of the gas engine with the gas producer is going to be valuable to the clay worker, for the clay worker has use for all the waste hot air or steam in the drying. In the gas engine you can get about 50% ; in the steam engine about 10% or less.

When it comes to the kiln, there is no question but what there is a great future for the gas producer. To use the gas producer alone and let the gas cool before it comes to the kiln, in a periodical kiln, is not practicable in many wares. I don't believe that you can get temperature sufficient to burn the ware, and even if you did, you would do it at a great loss. But if you can use the waste from the kiln to preheat the air and the gas unquestionably you will get a temperature sufficient to burn the ware and bring the fuel consumption somewhere near your present consumption. I don't believe that at present there would be very much saving that way. But unfortunately on clay plants we need all that heat to dry our ware, so where are you going to get the hot air to use in combustion with your gas? When it comes to the application of the gas producer to the continuous kiln, there is no question but that there will be its application to the burning of the ware and a great saving of fuel.

Mr. Powell: About what temperature should the gas be?

Mr. von Oven: About 1200° F. within the producer.

Mr. Mamer: The temperature of the gas?

Mr. von Oven: Yes. The gas should be at a temperature of over 900°, up to 1200° for kiln work. It is best to use hot gas for this purpose, except where you want to do melting, then you can get your gas down to 500°, so that you can get the greatest amount of heat units per cubic foot of gas. The temperature would be less when it gets to a kiln. The sensible heat will drop, but right in the producer itself the temperature is higher.

Mr. Powell: When its color is a little on the olive order, then it is likely to be a little hotter than if it is on the yellowish or green shade?

Mr. von Oven: Yes.

The President: I would like to announce the Committee on Resolutions:

Charles W. Lansing, Chicago.
Walter M. Pratt, Earlville.
F. G. Matteson, Galesburg.

I would like to have them meet to-day or sometime before to-morrow noon and adopt resolutions.

Secretary Hartwell: The next on the program is the paper, Concrete Construction in Brick Plants, by Mr. Elmer C. Peper, of St. Louis, Mo. He was suddenly called to Mexico and has not returned. His paper has been sent to us and will be read by Mr. Gibson, of St. Louis. (Applause.)

Mr. Gibson: I might say, Mr. President, that yesterday I got a telegram from Mr. Peper. He said: "Sent paper. Can you postpone meeting until Friday morning?" I thought it was unnecessary to wire Mr. Peper that I was afraid that while he might be here with his paper on Friday morning, he would not have a convention. However, the paper got here, and after it came there was a little scrap between myself and several of my colleagues as to who should read it. Some people might be able to write papers and then not read them. I know I am not qualified to write a paper and when I am called on, on such short notice—as you may see from the trembling of my hand occasionally—I don't know that I am prepared to appear before the public in reading a paper. I might say that I feel like the fellow who was going to be married. They tell us, and perhaps some of the gray-haired men around here will corroborate the statement, that when a man is going to be married—the first time—he gets rather excited: it grates on his nerves. A young fellow about to be married was in the room adjoining the place of ceremony, with the preacher, and he got pretty well wrought up. He had never rehearsed, and he got to asking a few questions, and he stammered. He said, "D-doc, w-wh-when I ge-get m-mar-married, n-now, do I k-kneel down on the f-floor?

"Yes," the preacher told him, "you can kneel right down on the floor with your bride, while I bless you."

"D-do I-I p-put the ring on t-this fin-finger or that?"

"Why, you put it on the ring finger."

"D-doc, w-when I k-kneel d-down on the f-floor at t-that time, is it cistomary to kuss the bride?" (Laughter.) Under such circumstances, I don't know what is customary with the fellow who is caught in such a condition, but I think it ought to be cistomary to kuss. (Laughter.)

CONCRETE CONSTRUCTION IN BRICK PLANTS

Before beginning with the subject matter of this paper, the writer wishes to make a statement. It is not the desire and intention that this be considered an apology. If such a thing were considered necessary, this paper would never have been written. The reason for the statement is the desire to have the position of my company distinctly understood. If anyone should for a moment question the propriety of the treatment of the subject, the writer respectfully refers to the introduction and rests his case.

When the title was assigned it was at once appreciated that as so many able and exhaustive articles and papers had been prepared and read on this subject in recent years, in presenting this topic the writer would not find it difficult to interest you. It was for this reason that it was decided to make the feature of the paper a description of a use of concrete which perhaps is not known to all and which was developed by us.

Right here it is fair to state that if the mention of concrete awakens any opposition such as comes from the natural prejudice which some brickmakers have, to a material which is a rival in some cases, for the sale of his product, he will find a willing second in us, in that some machinery men combat our practice for business reasons and possibly prejudice against our improved method of concrete construction in erecting Dry Pans.

To begin our subject then, let us look into the condition under which brick plants are generally built, pick out the one that most nearly represents the average case, and see where the use of concrete under such conditions is advantageous.

The ideal case so often cited in which it is possible to have a monopoly, where demand is big, where clay could not be improved upon and where there is no limit, within reason, to the money supply, must be discarded as being so chimerical and rare as to be practically impossible. On the other hand, a case in which competition is keen, market doubtful, material ordinary and capital to be borrowed, must also be disregarded as being decidedly foolhardy. It is some sane condition between these two extremes in which we must be interested.

Cases of good and inexpensive construction, as well as the reduced cost of maintenance resulting therefrom, is the prime consideration where concrete comes into prominence.

It is not our intention as stated before, to go into the relative merits of brick and reinforced concrete construction with reference to fireproof qualities, but to the recognized desirable uses of concrete, such as foundations, line shaft, piers and floors, we want to add a use not quite so well known. The use referred to is in connection with the dry pan.

Is there a piece of machinery in your plant that has not at one time or another, or may be at all times, given you more trouble than your pan? If there is, you are decidedly unlucky.

Now as to the reasons for these troubles, shouldn't we expect them? From the very nature of the work done by all grinding machines, it is difficult to make iron and steel fastened by bolts to stand up against the pounding and racking necessary to reduce big lumps of shale or clay to small particles.

In the ordinary case it is only by means of most careful workmanship and heavy and expensive construction that any satisfaction at all can be expected. If any of the various necessary bolts get loose, it does not take long for something to break. If the foundation is at all insecure, there is and will be nothing but trouble for all time.

It was while endeavoring to make the foundation as nearly perfect as possible that we conceived the idea of increasing its function and making it take the place of some of the iron frame work, the rigidity of which depends upon the security of bolts. While working along this line, a number of other features developed which in themselves would make such a construction a successful improvement over the old.

The exact form, as finally built, is difficult to understand from an explanation by words alone, but with the aid of drawings and photographs the meritorious features are not hard to comprehend.

We certainly would like to have given a practical demonstration, but for the present we are limited in Champaign to drawings and photographs.

For a long time pans have been built with concrete foundations. To improve the existing designs we raised the piers higher and higher until we found that with the addition of but little more height, the piers would take the place of the iron side frames. In making a hole in the side for the chute, the step was a natural one to provide a hopper bottom between the piers to receive the ground material directly from the screen plates. This was worked out satisfactorily. After providing a pier for the vertical shaft, the construction was complete. The details were gone over carefully, a pan was constructed, and from the very first no trouble of any kind was experienced. The cost, if anything, was less than an ordinary iron side frame pan. The forms for the concrete were put together by unskilled labor, the reinforcing rods were not particularly difficult to put into position, and the concrete was easily mixed and poured into the forms.

The result was practically a solid block of concrete forming the sides, chutes, bottom and center pier. The great weight was found to absorb any jar occasioned by the mullers.

The mechanical features are not at all complicated and are easily explained. The bolts that hold the boxes for the pinion shaft extend to the bottom of the foundation and act as reinforcing rods, as well as furnishing an absolutely firm fastening for the boxes. This is also true of the bolts that hold the I-Beams upon which is fastened the vertical box for the center shaft. The I-Beams are laced together by steel straps riveted in place. The bolts that hold the step or toe box extend to the bottom of the foundation also. This step box is not bolted directly to the pin, but a 12 inch block of hard wood is placed between the concrete and the iron in order to form a cushion for the vertical thrust of the shaft, as the concrete which forms the hopper bottom was reinforced with a few iron bars. The connecting concrete between the side piers is brought up slightly above the top of the revolving pan and timbers are bolted around the top, in such a manner as to overhang the side of the pan. This is to prevent the falling of uncrushed material between the pan itself and the concrete foundation. Should this space be left open, in feeding the pan, pieces would very likely fall into this space and naturally feed into the elevator, thence to the screens, not a very desirable condition. With several minor changes in details, this form can be built to fit practically all of the different makes of pans on the market. This, in itself, is quite an item for consideration in the remodeling of old equipment. The actual running of these pans has brought to light several things. Its solidity and strength are greater than can be obtained in the old style pan without the use of a prohibitive amount of iron. The possibility of breaking a side frame is practically removed. But if by some freak or misfortune such a thing should occur, repairs are quickly and easily made at small expense. It requires less horse power for actual operation. The reason for this is that the clay falls by gravity to the chutes and thence to the elevators, doing away with the mechanical scrapers underneath the pan, which in the old style, drag the ground clay to an opening above the chute to the elevator. This item, small in itself, consumes more power than is generally understood or known.

The step box is easily accessible. It is not necessary to stop the pan and crawl on your hands and knees through the dust or to wiggle your way on your back or stomach in order to see if the box is getting oil or to tighten the bolts. While the pan is running a man can walk straight to the box, examine it, in most cases without artificial light, tighten up bolts if necessary and return without looking as if he had been through a dust bath. Instead of making the concrete connecting the side piers solid, an arched opening may be constructed, which in no way interferes with the strength of the structure and which provides an easy approach to the center pier.

The only objection that has been offered to our design, is in our occasional specifications for two elevators. Let us look into this. In the first place, isn't there more expensive equipment in a brick plant than elevators, and won't the pan, if needs be, work with only one? How many times have you stopped your pan until you had cleaned the elevator boot or made some elevator adjustment? Where two elevators are in use, one can be stopped at any time for adjustment and it is not necessary to stop the pan, as it will grind just the same amount of material and will deliver to the screen without stoppage. In case you have a battery of pans, it means oniy one extra elevator, as for two pans three elevators are required, three pans four, four pans five and so on.

Another structural advantage is that the plates which guide the material under the mullers are not supported by one cross bar, but each end of the plate is supported by a separate bar, thus making a more rigid construction, yet furnishing the means for a favorable adjustment. Furthermore the raw material can be fed under the mullers as well as directly on the screen plates with equal facility.

In presenting this departure from ordinary dry pan practice, we naturally expect and invite criticism and questions. Thanking you for attention, etc.

Mr. Loy: I want to say, Mr. President, if I had heard that paper perhaps six weeks ago, I would have used more cement. I am using cement in the factories now in course of construction, but I would have used more if I had got that idea sooner.

Mr. Roller: I have seen a cluster of pans a number of times that has been in operation—set in the manner in which it is set now—for at least ten years. It was a wood frame cluster originally. It was a wood frame, but the frame had become defective and instead of using concrete, as this paper suggested, the pier was built on the side with brick, with rods coming down the center to take the upright shaft and also to hold the boxing for the cross shaft. This pier was built probably 20 inches in thickness and battered up from each side with a supporting pier built out from the center at the end. That has stood there for at least ten years, without a crack or anything in it, and stands just as firm as the Rock of Ages. It is brick, not cement, with rods running up to hold this cross foundation.

Mr. von Oven: I would like to ask if any of the members ever had any experience with the disintegration of cement due to oil under bearings, as in foundation caps.

Mr. Watt: I had a little experience with that several years ago. The cement disintegrated.

Mr. Robb: The oils which will disintegrate cement are not very common in use on a brick plant. The mineral oils have almost no effect on the concrete, but the animal fats are very destructive and in some cases will cut a concrete out in a very short time. Just why that is, I don't know. Perhaps it has not been a subject of enough importance to find out. But the minerals oils will not act that way.

The President: Cement is a mineral that belongs to the same family. That is why mineral oil would not affect cement but animal oil would.

Mr. Robb: I would not explain it that way.

The President: That is what I have heard.

Mr. Matteson: I cannot understand why anyone should want to make a cement pier when they can make brick.

Mr. Salfisburg: If brick makers use cement, why, who is going to use brick?

Mr. Mamer: In building our kilns, I want to say that we have practically used no mortar at all. Just simply used mud mixed up in an old-style pud mill. We have one kiln that has been standing since 1893. Of course we laid a very close joint; I don't suppose the joints will average over one-eighth of an inch. If I was to build a dozen kilns I would never attempt to use any mortar, outside of the outside 4 inches, and if I did on that, it would be lime mortar.

If cement can be used to any advantage in the foundation, it certainly must be isolated from the heat far enough, for cement, while it will stand a heat of 500° to 600°, I do not believe that it will stand above that. A man had better use bats instead of cement.

Mr. Robb: I had a little experience with this concrete under heat and waste heat pressure. I found that after three or four years the life of that concrete is gone. And I don't think the heat ever reached a point above 400°. I hadn't seen it above 450. It was usually from 350 to 400°.

Mr. von Oven: I had an experience in a similar line—the use of limestone concrete with heat. We all know that the re-inforced concrete construction is a construction which is here to stay. Recently while advocating the use of a precious metal slag for concrete and street use, I had the occasion to talk re-inforced concrete chimney construction with one of the leading building and bridge engineers of one of our prominent railroads. This gentleman stated that to his best knowledge and without prejudice, limestone concrete was a failure under certain heat conditions and in stack, chimney and flue work. It was not so much the fault with the cement as with the limestone. Limestone calcines ordinarily at from 1200°F. to 1600°F., however, a slow calcination has been shown to be active at from 400° to 700°F. and it is this which weakens such a structure.

The dehydration point of the cement should be as high as possible; the aggregate or stone should also have the highest heat resisting qualities, that is it should not crumble, crack, spall, calcine, etc., to any extent below the dehydration temperature of good portland cement and be as much higher as possible. The slag in question had a melting point of 2800°F. and when mixed into a concrete, make a mixture much more fire resistant than the ordinary limestone concrete. I personally have no use for limestone concrete under heat conditions.

The President: It depends on what you use in your cement for concrete. You can use stone or sand and it won't stand no heat. It will disintegrate within two or three years at the best, if there is any heat.

The next subject is Daily Operating Reports for a Clay Works. That is ready for discussion.

Secretary Hartwell submitted at least a dozen forms of daily reports from factories in all parts of the United States, which were to their main office in a distant city. One of these blank reports was explained by Mr. Lauer. They were shown to about forty members after adjournment, when they crowed around the Secretary's desk. Every one was anxious to get more details regarding reports of this kind.

The President: It is desirable to finish the program before adjournment, if possible, the first of the questions, is, "The Engine and Boiler Rooms," it brought forth no discussion. The second subject, "Daily Wages versus Piece Work" was then taken up.

Mr. Roller: I believe it is largely a question of what kind of plant you are operating whether piece work or day labor would be the most advantageous, or whether part piece work and part day labor. Now for a large plant with large boiler capacity and master machinery of all kinds where they start and never stop, the making end of the work can probably be carried on a little cheaper by regular day work because you have practically all the men under control, at any rate. All you have to do is to get your clay in and you have a steam shovel to do that, and when it is once dumped into the crusher, the rest of the men have got to get it out. It is up to them. There is nothing else to do. But there are some parts, even on a plant of that kind, where I believe it is better to have piece work. In setting brick into the kiln and in unloading the kiln, I believe it can be carried on better, with more satisfaction to the owner and the men, and the work will be done just as well with less commotion and they will work more willingly and keep things going better by piece work, without having a superintendent or an overseer, boss, or whatever you call him for every five or six men. But on a smaller plant, one that wants to make twenty-five thousand a day, it usually has a machine which, if it was run to its full capacity for nine to ten hours, would make forty or fifty thousand. Now, by giving the men piece work, every one is interested and wants to get through as soon as he can and probably by half past two or three o'clock every day they will be through with their day's work, and my experience is that they will handle the brick and do their work just as well as though they were working by the day, because it is a fact that in handling clay wares there is a speed at which a man can work, and a pretty good speed, and he can do the work better than if it is dragging along and he is waiting for the quitting time to come. I believe it is the best plan in almost every instance, not only in the small yards but in the large ones to have the work done by the piece. Pay so much a thousand for setting them in the kiln. Let the setters have charge of the work. Thy will all work in harmony. The same way with unloading.

An adjournment was then taken to 2:00 o'clock.

(Next session in next issue.)

"BURNT MONEY"

This is the title of an article in January Everybody's that everybody ought to read. Some years ago it was realized that the generally shoddy construction of our buildings made great conflagrations in our cities not only possible but certain and a fire-prevention movement was set afoot. Mr. F. W. Fitzpatrick, of Washington, started it. He had studied the situation and, being one of the foremost architects and authorities upon construction in the country, was eminently qualified to advise how to go about the work. He organized the Building Inspectors' and other societies whose main purpose is to secure better buildings in our cities; he induced municipalities to revise their building codes; the insurance companies helped and the architects have helped. Mr. Fitzpatrick has put the matter plainly before the people and has written much upon the subject.

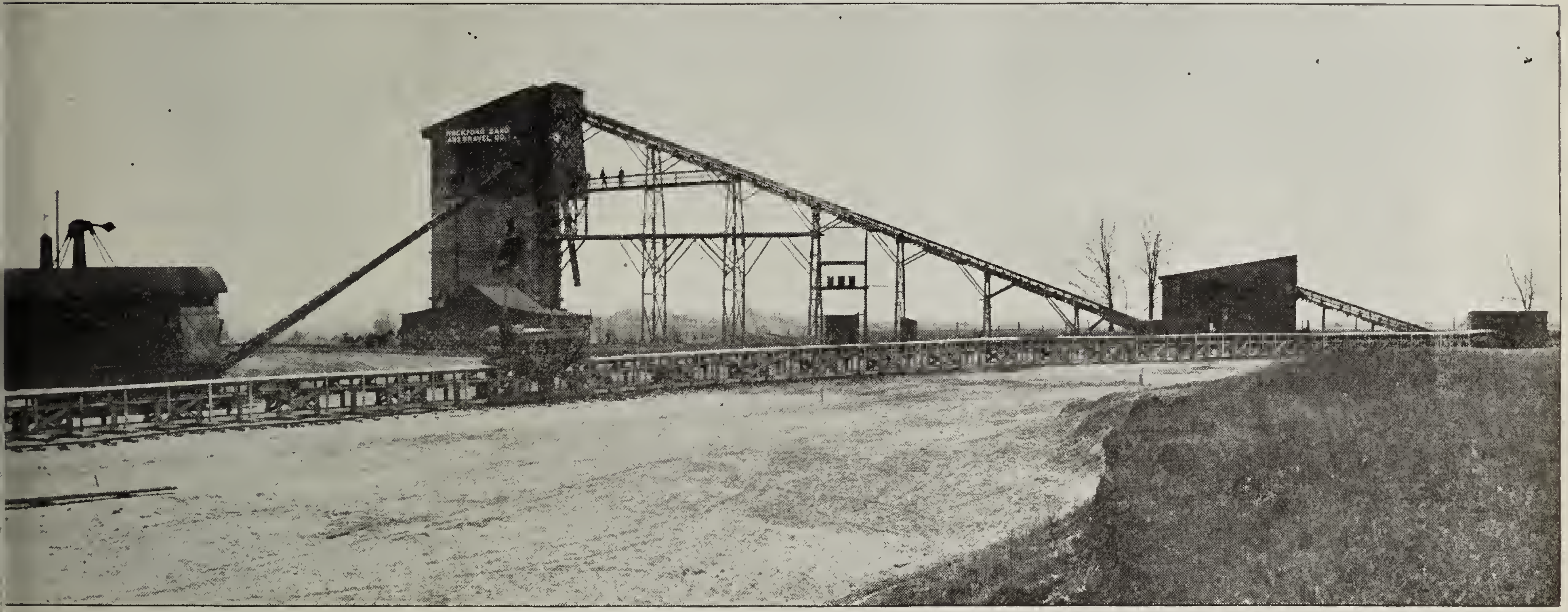
Articles by him have appeared in McClure's and other periodicals and newspapers and now Mr. Samuel Hopkins Adams, one of the original muckrakers, and who has been instrumental in securing many needed reforms in many directions, has assisted Mr. Fitzpatrick by writing this splendid article for Everybody's.

The editor prefaces that article by saying: "This is a record of shame. A sensational indictment of American extravagance. We know that our national fire bill was startling, but the facts and figures that Mr. Adams presents here shocked us. They'll shock you. Not satisfied with slaughtering our forests, we are burning up our homes at a killing pace every year. We are pervaded with pride over our superiority to the rest of the world, while actually our fires cost us more than the combined loss of any other six civilized nations. Here are the figures straight in your faces. You can change the record. Mr. Adams shows how. Remember, we cannot as a nation waste our substance and prosper."

A NEW ILLINOIS SAND AND GRAVEL PLANT

The plant of the Rockford Sand and Gravel Company has lately been completed and has some special features very much different from the ordinary sand and gravel plants. This plant is built to handle many carloads of sand and gravel per day, the large sized gravel being crushed, and all of the sand and gravel being divided into several sizes. The principal features of the plant are as follows: A steam shovel of a special type doing the excavating. This shovel is different from the ordinary steam shovel as it works the dipper, digging the gravel, below the level of the ground, which is operated entirely with cables, no dipper handle or heavy chains being used. The shovel after filling and lifting the bucket revolves on a turn table bringing the dipper over a conveyor located at one side of the machine. This conveyer belt is between five and six hundrd feet in length, (between the shaft centers) and is equipped to convey One Hundred yards of material per hour.

This conveyer delivers the material to the "pit-house," here it is switched to a belt conveyor which runs up hill at 20 degrees incline delivering the material at an elevation at about 20 feet above the level of the ground. The field conveyor or first one mentioned is made so it can be swung around in a circle over the field as it is required, and as the steam shovel advances with the excavation, the pit house being the radial point. The conveyor from the pit house carries the sand and gravel to a screen which separates the sand and fine gravel from the coarse gravel, the coarse being dropped by this screen into a No. 5. Austin Gyratory Crusher, the fines being passed through this screen and delivered to a conveyor belt. This conveyor belt is 24 inches wide and runs up hill to an elevation of 60 feet in height. This conveyor being 200 feet in length from center to center of pulley shafts. As the belt passes the discharged spout of the crusher the crushed gravel is delivered on to the sand and fine gravel, which first passed through the screen, and which had been previously loaded onto the belt. This sand protects the belt from the cutting action of the sharp stone as it falls from the crusher. When this material has reached the top of the building it is fed by gravity into a large revolving screen, this screen is 4 feet in diameter and 20 feet in length and has 3 sizes or sections, separating the sand and gravel into fine and coarse sand or "Torpedo," roofing gravel, and concrete stone. Under the screen is built pockets which are 10 by 15 feet square each and 44 feet in height. From these pockets the material is drawn into cars standing on tracks on either side of the bins, and also can be drawn out of the pockets into wagons for local delivery.



THE NEW PLANT OF THE ROCKFORD SAND AND GRAVEL COMPANY

The whole plant is equipped with motors, current being furnished by the Rockford Electric Company, Stephens-Adamson Manufacturing Company of Aurora furnished the pulleys, shafts, conveyors, belts and also the screens used in the plant, The Austin Manufacturing Company of Chicago furnished the No. 5 Crusher and the General Electric Company of Chicago the motors.

The plant in full operation is using less than 50 horse power outside of the power used on the steam shovel. This shovel was built by the Lidgewood Company of Chicago and is fitted with a boiler and 3 winding engines.

In the plant were used 150,000 feet of lumber, several hundred yards of concrete, and is very substantially built in every detail. The crusher house and screen have concrete foundations, and the building is erected over a concrete basement. The building covering these machines is a two-story building entirely enclosed in iron. On top of the storage bins is built a building 22 by 32 feet square and two stories high which house the screen, shafts, pulleys, belts and motors so that the plant can be operated in stormy weather either in summer or winter without delay.

This plant is owned by B. A. Knight and Shemauss Bros., of Rockford, Illinois. Mr. S. A. Gibson being General Manager of the plant. The plant was designed and built by Colby M. Avery of Aurora, Illinois.

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GEORGE H. HARTWELL, Editor

SUBSCRIPTIONS

Send One Dollar bill or stamps for United States or Mexico and one dollar fifty cents for all other foreign counties.

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Ever notice how things that are none of your business will interest you?

Occasionally success is due to talent, but more often it is the result of hang dog persistency.

A lazy man makes as much fuss when he has a little job of work on hand as an old hen does who is trying to raise one chick.

Did you send in your subscription for the only semimonthy Clay Journal that is published in America? If not, do not neglect it now. The cost is only one dollar for a year.

"Advertising means telling the public what you can do for them. This is a busy world, and unless you do tell the public about yourself the public may be a long time finding out."

Some people believe everything they hear and a lot they dream. There will be many believers in Concrete in Chicago next week but it is only necessary to take them to that wonderful warehouse of Montgomery Ward & Co., at Chicago Ave., and Larrabee Street to convince them that Concrete is a dream and they will go home well satisfied with good burned clay—It is It.

HUDSON RIVER CLOSED, BRICK HIGHER

This is midwinter, navigation on the Hudson is closed and quotations are nominal. Manufacturers on the spot try to get the best prices they can, asking the trade as high as $7 per thousand. Actual sales in the open market were on the basis of $6.75 on Thursday, for good brick, but the upward tendency of the market was strong, as the demand for material is large for this season of the year.

Seven-dollar brick, in the opinion of shippers and agents, is a near reality, under a continuation of highly favorable weather. The farmers say the remainder of the winter will be of the open and shut variety, with the cold snaps of brief duration. The up-river brick men judge that the next two months will have alternate spells of freezing and thawings, and on the whole will be a pretty good season for brick building, as winters go.

The ideal situation for the brick trade is, of course, to have the river frozen as tight as a drum, so that no more supplies can come down; and the temperature here in the city as balmy as at St. Augustine, so that there will be nothing to do but work. Under a limited supply and a continuing demand prices might be expected to take an aeroplane right to the eight-dollar level. Three years ago, in midwinter, under such circumstances, common brick touched ten dollars, but the reaction was severe. That was the lesson learned in the last boom.

Condition at the close of the week resemble the ideal. The river is closed, so that even Haverstraw is unreachable; while in town what is a good demand for the season keeps up, with only brief interruptions so far. President Hammond of the Brick Manufacturers' Association, says the stock left over at the close of navigation in the districts north of Newburgh was twenty-seven million less than last year. He is having an account taken of the amount of brick on hand along the river. The final figures will be less than the record representing the total supply last year by a large percentage. About sixty cargoes have been covered up here for the winter, awaiting a higher level of prices.

BRICK GOES TO $10 AT PORTLAND

Common brick have been advanced in price to $10 a thousand in Portland, Oregon, and contractors are doing more or less murmuring. The brick combine avers that the advance was necessary on account of the increased cost of help and of property upon which brick can be made contiguous to the city. There are about 12 brickmakers in and near the city, who are in the combine and sell their output through the one office.

Contractors who buy a great deal of brick and think they know something about the cost of production aver that common "mud brick" can be placed in the kilns for $1.85 a thousand, and that they can be delivered for $1 more, and that the combine is therefore making big profits at the old price of $9 a thousand.

"The unreasonably high price will drive us all to concrete construction," a contractor said, "as concrete is just as good as brick and is much cheaper. The combine is charging us more for brick than in the boom times of a few years ago, when labor was much higher than now."

OBITUARY

Mrs. Catherine E. Benjamin, widow of G. Z. Benjamin, the well known Hackensack, N. J., brickmaker, died at the home of her daughter, aged 86 years.

Marcus Lentz, 70 years of age and at the head of a Pottery Company at Cincinnati, Ohio, is dead. His remains were taken to Springfield, his old home.

Thomas S. Gregory, a well known Vicksburg, Miss., citizen and ex-alderman as well as a brick manufacturer, died at his home of pneumonia. He leaves a wife and one daughter.

John F. Gould, formerly a brick manufacturer on East Walnut Hill, Cincinnati, Ohio, aged 65 years, died of pneumonia at Burnside, Ky., where he had moved only two weeks ago.

William Brunt, Sr., the last of the founders of the Ohio pottery industry and the man who made the first "white ware" ever successfully marked, west of Pennsylvalia, died at his home in East Liverpool, O. He was born in England, was a California "forty-niner" and the organizer of the Potters National Bank in 1881, and was its president at the time of his death.

PORTSMOUTH STOCKHOLDERS SECURE CONTROL OF COMPANY

Portsmouth stockholders in the Buckeye Fire Brick company, which has a big plant at Scioto Furnace, Ohio, succeeded in gaining control of that company at the recent annual meeting.

The Chicago stockholders headed by T. C. Moulding, who have been in the saddle, were ousted from active management. This was effected by an alliance of Portsmouth interests with E. P. Stevens, a heavy stockholder, who hitherto worked with the Moulding interests.

At the meeting the directors chosen were John Richardson, Floyd W. Knowles, A. T. Holcomb, Henry Prescott of Portsmouth, E. P. Stevens of Scioto Furnace, and P. M. Combs, W. P. Goodsmith, F. W. Luckey and T. C. Moulding of Chicago.

The directors organized by electing John Richardson president, in place of Mr. Moulding; Floyd W. Knowles, vice president; Henry Prescott, secretary, and E. P. Stevens, treasurer and general manager.

The affairs of the company are in a very satisfactory shape.

The change whereby Portsmouth stockholders secure control of the Buckeye Fire Brick Company marks the concluding chapter in a struggle of many years' standing.

The efforts of the minority stockholders to oust the Chicago stockholders from control of the concern began years ago. N. G. Spangler of Chillicothe, the division freight agent of the B. & O. S. W. with $4000 stock held the balance of power. Both sides tried to acquire his holdings and for a long time the fight continued until finally Spangler disposed of his shares to the Chicago parties. The minority stockholders continued the fight with even more determination and have eventually succeeded in gaining control.

FIRE, ACCIDENTS AND DAMAGES

The Franklin Kaolin Co., Asheville, N. C., has been placed into the hands of a receiver.

The plant of the Huntington (W. Va.) Roofing Tile Co., was damaged by fire to the extent of $2,500.

William Ferguson, an employee of the Rose Brick Co., Roseton, N. Y., had his arm badly fractured by a tree falling upon him.

Frank C. Moore, an inmate of the State Prison at Lansing, Kan., and an employee of the brick plant left with a car of brick which was sent out of the yard.

Malcohn Gillott, an employee of the Sheffield (Iowa) Brick & Tile Co., had an arm torn from his body so that he died later. His arm caught in the belt.

Seventy tons of solid brick, iron and concrete crashed from the dome of the City Hall at San Francisco, Cal., with the result that not one person was injured.

An involuntary petition in bankruptcy has been filed against the Zanesville (Ohio) Tile Company. The company has been in the hands of a receiver for some time.

A verdict has been given to the Welch Brick Co., Beaver Falls, Pa., against the Fidelity & Casualty Co., of New York, for $4,859.22 for damages sustained when the plant was wrecked by a boiler explosion.

Messrs. Pohlman and Reese, Davenport, Ia., were awarded $3,700 amount of the damages due for the land taken by the city from their brick works. The city opened up a street through their property.

Fire of unknown origin caused a $75,000 loss to the plant of the Louisville (Ky.) Fire Brick Works at Highland Park. The plant was one of the largest of its kind in the state and covered 10 acres of ground.

Mrs. Celia Reilly has appealed to the Court of Appeals in her case against the Troy (N. Y.) Brick Co. Her husband was killed in a clay bank slide. The Supreme court dismissed her case against the brick company.

Burglars broke into the plant of the Granite Brick Co., Columbus, Ohio, and stole all the brass valves of the machines, 25 lubricating oil cups from engine and line shafts, water gages on boiler and all the brass they could find about the place.

Jonas Becher, an employee of the Louisville (Ohio) Brick & Tile Co., asks damages to the amount of $10,000 for injuries received while at work in their coal mine, the roof of which caved in upon him and badly crushed his arm so it had to be amputated.

CONCRETE BRIDGE HAS COLLAPSED

A new concrete bridge over Rock Run Creek in Elkhart township, two and one-half miles east of Goshen, and which was only finished late last Fall at a cost of $2,750, collapsed Sunday and is a total wreck. No one was on the structure when it went down. The National Concrete Company of Indianapolis, builders of the bridge, must replace it without cost to the county, as it had not been accepted and only part payment had been made on it. The bond of the building firm is sufficient to make good all loss to the county. The bridge was a 70′ span.—*Elkhart, Ind., Truth*, Jan. 26, 1909.

THE CLAY PRODUCTS ASSOCIATION OF AMERICA

A new organization, called The Clay Products Association of America, was formed on February 4th among the Brick manufacturers attending the Rochester Convention, the object of which is to promote the use of burned clay building materials.

The question of publicity is one which must appeal to every observing clayworker of the country. We all believe most thoroughly in the virtues of burned clay as a building material, and have the greatest confidence in its ultimate success against all competition, but it must be confessed that we have done little in the past to impress the general public with its superiority.

While nearly every other material entering into the construction of a building has been made the subject of extensive and vigorous advertising, the burned clay manufacturer has been content to accept such business as came to him by reason of the inherent superiority of his material, and has done little or no publicity work. This inactivity on his part has resulted in an abnormal growth, at his expense, of his chief competitor, Portland Cement Concrete, for while the cement industry in the last nine years has grown nearly ten fold, the burned clay industries have scarcely doubled. This wonderful growth of our competitor has been due to a very large extent to his superior advertising activity, and the time has now arrived when the clayworker should profit by this example and should bring before the public of this country the merits of his wares, which are more fire proof, more permanent, less expensive as to repairs, and more artistic than any other material in existence.

This work the new Association now proposes to undertake, and it asks every clayworker of this country to give it his moral and financial support.

It proposes to proceed as follows:

First: To conduct among the Architects of the country a competition for the best design in brick, as applied to the moderate-priced isolated house, offering therefor a series of substantial cash prizes. Advice from the best authorities on this subject leads us to believe that this will result in a large number of designs, representing the best talent in the country. Such a competition will stimulate the interest of thousands of Architects in brick construction, which of itself cannot fail to bring substantial returns.

Second: To publish a book containing fifty or more of the best designs thus obtained, each representing a house in elevation and plan, accompanied, if possible, by a reliable estimate of the cost of construction; the whole prefaced by a few interesting articles as to the value and advantages of brick for such construction.

Third: To advertise this book freely in the popular monthly magazines and some of the leading Country Life papers, for free distribution to interested parties.

Fourth: To advise the members of this Association from time to time as to the name and address of parties who have requested this book, thereby furnishing advance information as to prospective building operations.

It is thoroughly appreciated that such a campaign of education is somewhat limited in its scope, but it is our belief that we should concentrate our efforts for the first year on a single proposition, with the intention to extend our activity into wider fields in succeeding years. Acting on this belief, we have selected the isolated moderate-priced house as the most promising object of attack.

Any individual, firm or corporation which is interested in the promotion of the use of burned clay building materials is eligible for membership to this Association, and details as to membership fees, etc., will be gladly furnished by the undersigned Secretary.

We urge every clayworker in the country to lend a hand in this good movement. It is not our intention to decry the use of cement, wood or any other building material, but simply to bring the merits of our own material before the building public. The amount of ignorance on the part of the general public as to the character and the cost of a moderate sized house in brick is truly lamentable. Not only is the opinion prevalent in many sections of the country that a brick house is necessarily ugly, damp and otherwise objectionable, but that it is usually prohibitive in price. Such ideas can be wholly dispelled if we can place the truth of this matter before the public, and it should be an easy task to convince any inquirer that the brick house is not only the most permanent and the most artistic, but, in the end, the cheapest.

We have a real educational work to do; our plans are all laid, and we are ready for operation if the clayworkers of the country will give us their support.

Inquiries and subscriptions are earnestly solicited.

J. PARKER B. FISKE,
SECRETARY-TREASURER,
Flat Iron Building.
New York.

OFFICERS AND EXECUTIVE COMMITTEE.

R. G. Eisenhart, President, Horseheads, New York.
J. Howard Chambers, Vice-President, Philadelphia, Pa.
J. Parker B. Fiske, Secretary-Treasurer, Flat Iron Bldg., New York.
W. M. Hodges, Bradford, Pa.
John W. Sibley, Birmingham, Ala.
Will P. Blair, Terre Haute, Ind.

BRICK MANUFACTURERS TO GO ON RECORD FOR JUDGE WRIGHT

Rochester, N. Y., Feb. 5.—The National Brick Manufacturers' Association to-day prepared to place itself on record as supporting strongly the decision of Supreme Court Justice Wright committing Samuel Gompers, the labor leader, to jail.

A resolution was introduced at this morning's session which, in substance, expressed the satisfaction and confidence of the association in the decision of Justice Wright, and the association's faith in the courts and the law. It was referred to the committee on resolutions to be reported on at the closing session of the convention this afternoon.

One of the officials of the association said this morning that the resolution would probably be adopted.

HENRY HASBROUCK WILL GO TO OLEAN

Mr. Henry Hasbrouck and family, who have resided in this place for the past five years, the former being the general manager for the Johnsonburg Vitrified Brick Co., will move in the near future to Olean, N. Y., where Mr. Hasbrouck has taken a financial interest in a brick plant. During their sojourn here they have taken an advanced stand in church, social and business circles and have gained many friends who will be sorry to lose them from our citizenship. Mr. Hasbrouck will, we learn, at the earnest solicitation of the officials of the Johnsonburg Vitrified Brick Co., retain the general management of their plant here, visiting it frequently for the purpose of keeping it moving properly.

Concerning the Olean plant to which Mr. Hasbrouck goes as a stockholder and manager, we learn that the company is composed of some of the first business men of that city, among them being Mr. Bartlett of the Exchange National bank, Mr. Miller, of the Miller Hardware Co., and Mr. Luther, of the Luther Manufacturing Company. The company has two plants, one a dry press and the other a stiff mud. The stiff mud plant will be converted into a paving brick operation, making a high grade vitrified paving block for street purposes. The plant when completed and brought up to expectations will have a capacity of twenty million ten pound blocks per year which is equal to thirty million ordinary sized bricks.

Mr. Hasbrouck is an acknowledged brick manufacturing expert and all who know him and his ability will feel satisfied that his connection with the Olean plant will do much toward making it a prosperous and paying enterprise.—*Johnsonburg Breeze.*

H. B. MANTON ROBINSON'S SUCCESSOR

Henry B. Manton has been elected president of the Robinson Clay Product company to succeed Byron W. Robinson, who died December 30.

The new president is a cousin to the late one and as treasurer has been near the top of the concern since its organization in 1903. He has been identified with the Robinsons in the sewer pipe industry in Akron for nearly 20 years, beginning as bookkeeper in the office.

Mr. Manton is succeeded as treasurer by Russell L. Robinson, another cousin of the late B. W. Robinson. This also constitutes Russell Robinson's election to the board of directors. He has heretofore been superintendent of plants 4 and 9.

The other officers are John F. Townsend, Akron, first vice president; W. A. Humphreys, Chicago, second vice president; John J. Starr, secretary; Fred W. Butler, assistant secretary.

W. A. Humphreys is a new name on the board of directors. He has been a large stockholder but not actively connected with the business.

These officers with Dr. F. C. Reed, also a newly elected member, form the board of directors.

The directors took no action on extensions or operating changes and owing to the limited number of stockholders, no financial statement is made public.

THE CEMENT INDUSTRY IN 1908

The following statement regarding conditions in the American Portland cement industry during the year 1908 has been prepared by Mr. Edwin C. Eckel for the United States Geological Survey.

Although detailed figures are not yet obtainable, an estimate based on the information available indicates that the production of Portland cement in the United States was somewhat less than forty million barrels. This compares as follows with the output of recent years:

1905	35,246,812	Barrels.
1906	46,463,424	Barrels.
1907	48,785,390	Barrels.
1908 (estimated)	40,000,000	Barrels.

The falling off from the 1907 output was heavy, and is particularly notable because it is the first decrease shown in any year by the American cement industry since its inception. The decrease was not uniformly distributed throughout the country, for New York, Pennsylvania, and New Jersey will probably show the highest percentages of loss, while in some portions of the West and the Middle West the decrease was relatively slight.

During the year several small companies went into the hands of receivers and the financial stress also led to a change of control in a group of plants operating chiefly in the Pacific States. A fortunate effect of the depression was that it put a stop, temporarily, to the flotation of fraudulent or doubtful cement securities; though with improvement in general business conditions it is likely that promotion schemes will again be taken up on an even larger scale than before the depression.

The year 1909 opens with heavy stocks of cement on hand at most mills, but with good prospects for a steady, though slow, revival in the cement trade. It is unlikely that this revival will be sufficiently rapid to push mills to their capacity during the year, and it is therefore possible that the high record for output made in 1907 will remain unbroken for another year at least. The total maximum capacity of existing plants is now about 60,000,000 barrels a year.

Despite the business depression, or perhaps partly because of it, there have been a number of important technical and industrial developments in the cement industry during 1908, and others are still pending. These will be discussed in the Survey's final report on cement production, which will be issued early in the spring.

WASTE ORE AND FLUE DIRT BEING UTILIZED BY BRICK COMPANY

The Morgan Brick Company have started the manufacture of brickettes at their plant at Elm and Astor streets, Norristown, Pa.

The brickettes are made from waste ore and flue dirt. They are said to contain from 80 to 90 per cent of iron. Recently the first car load was shipped to the Warwick Iron Company, of Pottstown, to be melted. Mr. Morgan stated that samples of the brickettes would be shipped to Scotland and Spain.

INDIANA MANUFACTURERS' ASSOCIATION UP IN ARMS

The Manufacturer's Bureau of Indiana are aroused over several bills introduced by the "Solons" at the present session of legislature.

These bills are a blow to all employers of labor and should they be passed would materially increase the already heavy burden of manufacturers and employers of labor.

One bill prohibits any firm taking out insurance against liability or loss for personal injuries sustained by employees, repealing all conflicting laws heretofore enacted.

Another provides that during a strike, no employer of labor shall advertise for help without stating that a strike or lockout exists among his former employees.

Another bill provides that when action to recover damages for accidents to employees against their employer, where it is found that the company carries insurance, the insurance company is also made liable as a "joint-tort-feasor." If this bill should be passed, indemnity or casualty insurance would cease in Indiana and since damage suits are constantly accruing it would mean ruination to the employer of labor on a large scale.

Several other bills of alike preposterous character have also been introduced, including one authorizing attorneys at law to contract with clients suing for damages, for a per cent of amount of compromise. Thus preventing a chance for settling claims and gives the lawyers a premium for "drumming up" damage cases, and no doubt they will follow close on the doctor's heels and hang on to the ambulance as some of them have been in the habit of doing. All this adds to the cares of manufacturers and they are taking radical measures against the passage of the bills.

SELLS TO JERSEY PAVING CORPORATION

Contractor Jacob Peter effected a consolidation with the Jersey Paving Corporation of Newark, N. J., by selling his horses, wagons, harnesses, implements and materials to the latter, and leasing his office, yards and stables, on Frelinghuysen avenue, to the corporation for a term of years. Mr. Peter, beside getting the cash payment for the personal property, secured a substantial stock interest in the corporation and will remain more or less active in the business, although relieved of much of the strain. The corporation, which has been in business for nearly ten years is intimately associated with the Metropolitan Brick Company, of Canton, O., which is rated as the largest manufacturers of paving brick in the world; Ohio being the gretest producer of vitrified brick by long odds, and this being the concern making the great majority of all the paving brick in that State.

The president and manager of the Jersey Paving Corporation is J. M. Shreffler, and the main office of the company is in the Union Building in Clinton street. Mr. Shreffler has long been identified with paving in this city and vicinity.

It is a peculiarity of the transaction that the brand upon Mr. Peter's extensive array of wagons, tools, etc., will not have to be changed. Everything is stamped J. P., and that stands just as well for Jersey Pavement Corporation.

AMERICAN SEWER PIPE STATEMENT

The regular annual statement of the American Sewer Pipe Company shows the condensed general balance sheet as of Dec. 31, 1908, compared as follows:

ASSETS.	1908	1907
Cost of property, etc	$8,678,323	$8,667,308
Cash	127,785	115,448
Accounts and bills receivable	235,317	372,199
Good and supplies	747,729	780,058
Total	$9,789,154	$9,935,012
LIABILITIES.		
Capital Stock	$7,000,000	$7,000,000
Bonds	1,378,000	1,431,000
Accounts payable	263,229	294,392
Wages accrued	28,888	29,899
Interest and taxes accrued	36,289	38,309
Dividends		35,000
Surplus	1,082,748	1,106,411
Total	$9,789,154	$9,935,012

CLEANING OF BRICK FRONTS

Cleaning of Brick Fronts was the interesting subject of a paper recently read before the German Association of Brick and Terra Cotta Manufacturers. The author protested against the use of sand blast, or other method by which the original face of the brick would be taken away. When sand blast is used, and the face of the brick taken off, the cleaned front will show a good appearance only for a short time, as the brick with the original face removed will be very much more porous than before, and absorb dirt more readily. The use of steel brushes is also very bad, and will not give a first-class job. The best method is cleaning the brick fronts with a solution of muriatic acid. The strength of the solution can be made to one in twelve. When this solution is too strong for the brick, acetic acid should be used. A good soap solution will, as a rule, take off all thick dirt, and the cleaning with acid solution can then be done easily.

WILL TAKE UP HIS PROFESSION OF CONSULTING ENGINEER

Mexico, Mo., Jan. 30.—(Special.) Captain Oberlin M. Carter has severed his connection with the Mexico Brick and Fire Clay Company, and departed for Chicago tonight, where he will take up his profession as consulting engineer.

On October 14 of last year the brick company gave Captain Carter an option on the local plant, and appointed him manager for a period of several months in order that he might determine whether or not the plant was worthy of the purchase price. Captain Carter handed out a statement today in which he declines to recommend to his friends the purchasing of the plant, claiming that a larger plant can be built for less money. He says excellent clay exists in an abundance in this vicinity, and has increased the capacity of the plant for from 12,000 to 35,000 brick per day.

CLAY RAILROAD TIE IS TO BE TESTED

If a patent tie invented by John Murphy of the Murphy Grout company of Columbus, Ohio, proves a success, it will mean a new industry for Glouster.

A sample car load of the ties was made at the plant of The Wassall Brick Company and shipped to Columbus. Within the next few weeks these ties will be given a thorough test by the Hocking Valley railroad in Columbus, and if they stand what the inventor claims they will, the days of the old wooden ties are numbered.

The ties are made from the same quality of material as the Wassal paving block and are burned in the kilns. An iron rod passes through each tie from end to end. When the ties are laid in the road bed they are placed on a patent cushion that takes up the jar caused by the trains passing over them at a high rate of speed.

Experiments on the manufacture of these ties have been conducted by the Wassall brick factory for the past two years and not until just recently was the company enabled to manufacture a tie that came up to their standard of what the inventor expected. The first idea of the inventor was to use cement in the manufacture of the tie, but this was given up because of the cost.

Mr. Murphy, the inventor of the tie, was at Glouster and inspected the samples made by the factory. He was more than pleased with their appearance and expressed himself as being perfectly satisfied with the ties made. In commenting on his new invention, Mr. Murphy stated that the clay to be found in the Sunday Creek valley was especially adapted for the manufacture of these ties, and if they stood the test as he felt confident they would, in all probability a factory for their manufacture would be located there.

AMERCAN CLAY PRODUCERS' ASSOCIATION ORGANIZED

The clay producers of Georgia and South Carolina have formed an association to be known as the American Clay Producing Association, headquarters at Macon, Ga. This association is for the protection of the clay producers of the two states. Several large clay and kaolin companies of the state have entered the association, and it is the intention of the association to bring in all the clay and kaolin producers in the United States.

The association was organized to look into the matter of railroad rates. It is said that clay can be sent to this country from Europe with duty, cheaper than the clay can be sent from one part of the United States to another.

"Several railroads," said Mr. Martin, at Augusta, Ga., "charge 21 cents per thousand pounds on the United States clay, while they only charge 7 cents for the imported clay."

The Atlanta Mining and Clay Co., the Georgia Kaolin Co., the American Kaolin Co., the Immaculate Kaolin Co., the Albion Clay Co., the Peerless Clay Co., the T. G. Lamar Co., and the Thompson Kaolin Co., are the companies who will be known as the Charter members of the association.

The officers of the association are: Mr. P. W. Martin, of the American Kaolin Co., of Macon, Ga., president; Mr. Cecil Morgan, of the same company, secretary and treasurer; Messrs. W. B. Stratton and Martin, were selected a committee to see after rates.

SAND OR LIME BRICK OR BLOCK NEWS

B. A. Archey, Frankfort, Ind., is manufacturing cement brick and blocks.

The Detroit (Mich.) Faced Brick & Block Co., has been incorporated with $10,000 capital stock. Cor. S. Reeves of Jackson is a heavy stockholder.

At a meeting of the Holmes Artificial Stone & Brick Co., of Detroit, Mich., the name of the corporation was changed to the Holmes Stone & Brick Co.

The Glazed Cement Sewer Pipe Co., Tacoma, Wash., have taken out a permit to build a factory on lot 35, Northern Pacific tide lands addition.

The Hydro-Silica Brick Co., Seattle, Wash., has been incorporated with $150,000 capital stock by G. A. Misener, W. J. Witham, and H. H. Cheatham.

The Western Cement Brick Co., Los Angeles, Cal., has been incorporated. Directors are J. H. Clement, W. A. Stutsman, C. A. Stutsman, W. B. Forden, and S. F. Johnson, capital stock $250,000.

After an inspection of the Richester (N. Y.) Composite Brick Co. plant by the Milwaukee, Wis., directors of the Wisconsin Composite Brick Co., they are arranging to build their factory at 6th and Canal Streets. Henry Smith is president and E. A. Coulter secretary.

The Crume Brick Co., Dayton, Ohio, has been organized with $50,000 capital stock to make sand-lime brick. The incorporators are W. H. Crume, R. A. Crume, John V. Lytle, R. C. Kiser and O. M. Gottschall. The American Sandstone Brick Machinery Co., of Saginaw, Mich., will supply the machinery.

The stockholders of the Luverne (Minn.) Pressed Brick Co., the old officers were re-elected, the reports showed the affairs of the company in a very satisfactory condition. They made a high grade sand-lime brick and had no trouble in showing that they were superior to the other brick made in the city.

The Lake Superior Stone Brick Co., Calumet, Mich., held their annual meeting and the reports showed the company enjoyed a most excellent business and prospects for the future were very bright. The officers electer are Paul P. Roehm, president; Fred Smith, vice president; Charles Briggs, treasurer, and Richard Vincent, secretary.

BROTHER OF B. E. LA DOW HELD UP IN KANSAS CITY

L. W. LaDow of 208 East Thirty-fifth street, Kansas City, Mo., reported to the police that he was held up by two young men at 11:30 o'clock. Mr. LaDow is in the brick business at 306 Long building. Near the corner of Twenty-first street and Montgall avenue one of the robbers asked him for a match. While he was looking for a match the other said, "Hands up," and Mr. LaDow turned to look at a revolver barrel.

The highway men obtained $9. They overlooked a valuable watch. Mr. LaDow is carrying one of the dollar kind now.

"They appeared to be new at the business," Mr. LaDow told the police. "They were polite and accommodating. At my request they didn't disturb the pocket change that I intended to use for car fare and a luncheon. They had good clothing, and when they had finished with me said, 'Good night,' and told me to walk fast and not look back."

MISCELLANEOUS ITEMS

The Akron (O.) Brick & Tile Co. has decreased its capital stock from $40,000 to $4,000.

The Gem City Paving Brick Co., Quincy, Ill., certifies to a change of name to Gem City Press Brick Co.

The West Point (Ky.) Brick & Lumber Co. has certified to an increase of capital stock from $5,000 to $30,000.

The Richard C. Remmy Son & Co., Philadelphia, Pa., has been incorporated with $125,000 capital stock. This is an old company.

This winter the Barboursville (Ky.) Brick & Tile Co. will install additional machinery. The plant now represents an investment of $40,000.

O. J. Smith has purchased stock in the Dysart (Ia.) Brick & Tile Co., and will become an active member in conducting the business.

The Hillsboro (N.D.) Brick & Tile Co., recently held an election, and decided to sell $7,000 of the stock, held in the treasury, to make improvements.

The Tipton (Ia.) Brick & Tile Works has closed down for several weeks in order to make needed repairs and to enlarge the capacity of the plant.

The property of the Frankfort (Ind.) Brick & Con. Co. has been sold and the plant will be dismantled, the brick sheds being used for livestock sheds.

The Moberly (Mo.) Brick, Tile & Earthenware Co. has just installed machinery whereby their entire plant is lighted by electric lights, so that they can operate night and day.

Arrangements have been made to operate the Yoki Vitrified Brick Co.'s plant at Coffeyville, Kansas, at once. F. P. Meyenberg has taken charge as general superintendent.

The Maryville (Mo.) Tile Factory, owned by Anderson Craig, has been sold to John Corbin and Ben Green, who will operate same. The plant was built 110 years ago.

The McComb (Ill.) Stoneware Co. has been incorporated with $10,000 capital stock to manufacture and deal in clay products. Incorporators, E. P. Eastman, H. F. White and M. M. Cutler.

At the annual meeting of the Superior Brick Co., Lima, O., C. G. Dempster succeeds C. H. Cory as president; O. H. Odell is secretary; J. E. Grosjean, treasurer, and W. F. Newman, sales manager.

The coal and clay mines and the brick works of the New Era Vitrified Brick Co., Bay City, Mich., have started up. The plant has been idle for several months. Thomas Downey is superintendent.

The Eldorado (Ark.) Brick Works, recently incorporated, has purchased machinery. J. R. Randolph is president; A. Fleniken, vice-president; L. S. Fitzgerald, secretary and treasurer. Capital stock, $30,000.

The Tipton (Ind.) Clay Co. has been sold to a stock company at Kokoma. The new owners are incorporated, with the following officers: John W. Wilson, president; C. E. Wilson, vice-president, and C. D. Smith, secretary-treasurer.

The Prairie Portland Cement & Ceramic Co., Novaton, Okla., has been incorporated with $1,700,000 capital stock. Incorporators, Thos. J. McCormack and James Brenneman of La Salle, Ill.; Otto Proless of Kansas City, Mo.; J. E. Curtis and O. Gerlach of Iola, Kansas.

The Nelson Brick Co., Mound Valley, Kansas, started up their plant with orders for 1,500,000 brick on hand and will run full time.

The Windmiller Clay Co., Pittsfield, Ill. has been incorporated with $2,500 capital stock by Jacob Windmiller, James Carroll and Lawrence F. Ducey.

The New York Roofing Tile Co., Saugersties, N.Y., has been incorporated with $250,000. Incorporators are Geo. P. Colburn, L. H. Washburn and Rudolph F. Dowling, all of Saugersties.

The Commercial Club of Hamlin, Texas, has a proposition before them by parties from Texarkana to establish a $20,000 capacity brick plant there. It is expected the proposition will be accepted.

The Wadesboro (N.C.) Brick & Lumber Co. has been incorporated and will take over the business of W. T. Brasington. The incorporators are W. T. Brasington, C. S. Brasington and T. J. Covington.

The Penbyrn Brick Co., Bridgeton, N. J., at its annual meeting elected the following officers: Richard M. More, president; Henry S. Garrison, vice president; Foster C. Moore, secretary; John S. Ware, treasurer, and Edward P. Bacon, general manager.

A stock company capitalized at $15,000 has been formed, and bought the Mt. Pleasant (Ia.) Tile factory from Howart Wilt. H. K. Smith was elected president; William Stewart, vice-president; James T. Whiting, secretary-treasurer, and Robert Chrissinger, manager. Grant Williams, assistant-secretary.

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

Another attempt is being made by the Arcadia Kansas Times to reopen the brick plant at Arcadia.

The Girard (Kan.) Brick & Tile Co. are running their new plant, making tile of extraordinary quality.

White Pine, Tenn., is soon to have a pressed brick factory. Negotations already having been made for the machinery.

The capital stock of the First Avenue Brick & Tile Co., Evansville, Ind., has been increased from $20,000 to $40,000. Fred Klute is secretary.

The Denton (Tex.) Press Brick Co. are rebuilding their plant which was destroyed last month. The part burned will cost $15,000 to replace.

Dr. T. T. Wimer bid in at sherrif sale the plant of the Vinita (Okla.) Brick Co. for $3,650. The Doctor will improve the plant and build downdraft kilns.

The Rusk (Texas) Brick Co. has sold 1,500,000 brick for the new court house at Tyler. The company has more orders on hand than it can fill for some time.

L. D. Binyon, president of the S. S. Kimbell Brick Co., also of the Chicago Builders Club, is a candidate for alderman in the 27th ward on the Republican ticket.

The Lumbermen's Portland Cement Co.'s brick works at Carlyle, Kan., is progressing as rapidly as possible. A boarding house will be built soon to take on a larger force.

Johnson & Nelson, who have just completed the big plant of the Farmers' Co-operative Brick & Tile Co., at Mason City, Iowa, will remove their headquarters there from Red Wing, Minn.

A. Beckloff & Sons, Norwalk, Ohio, who operated a brick yard on Whittlesey Ave., has leased land on Lorain St., a short distance from the old plant and will re-establish a complete new plant.

The Kirkpatrick Conduit Co., 104 LaSalle St., Chicago, Ill., has been incorporated to manufacture clay conduits, capital $2,500. Incorporators, Edward F. Kirkpatrick, A. K. Bortham, and Edwin Terwillinger, Jr.

J. E. Mecuster, of Jamestown, N. Y., and family, have arrived at Sedalia, Mo., where he with his brother will build a $50,000 brick plant. The necessary machinery has been purchased.

Sam Moore has resigned his position as manager of the Lawrence (Kan.) Brick & Tile Co., and was succeeded February 1st, by Charles Elwell, who was formerly with the American Cement Plaster Co.

The Holman Brick Co., Sargeant Bluff, Iowa, has been incorporated with $60,000 capital stock. Incorporators, C. J. Holman, Albert Holman and Geo. N. Fairchilds. The new company has taken over the Holman plant.

The Clay Products Co., Brazil, Ind., started up again after a three weeks' shut down for making repairs and needed improvements: The company has all the orders it can handle and has been compelled to turn over some to other companies.

The Cherokee Vitrified Brick & Tile Co., Wann, Okla., has been incorporated with $100,000 capital stock. Directors are B. E. Rogers, of Nowata; Alvin McNeal, of Coffeyville, Kan.; David Pearson, of Coffeyville, and Wm. B. Sherwood, of Bartlesville, Okla.

J. C. Lincoln has bought the Johnson Brick Yard at Newfield, Middletown Ct., and will operate it in the Spring.

The Texas Press Brick Co., Ferris, Texas, has been incorporated by John Snyder, J. R. Wilson, A. A. Goble and others.

Will C. Satterfield, Cartersville, Ga., desires to correspond with owners of high grade Kaolin property with a view of leasing same.

The Business Men's Association of Grayville, Ill., is having a bed of shale tested with a view of building a $100,000 vitrified brick plant if the shale proves satisfactory.

The Murray Brick Co., Cleveland, Ohio, has been incorporated with $125,000 capital stock, by John Murray, G. Murray, S. C. Dalbey, James B. Ruhl and C. A. Chapman.

The Commercial Club of Lindsborg, Kan., have before them the organizing of a stock company and taking over the A. J. Swanson brick works and enlarging and operate same.

The plant of the Sheldon Brick Co. at Urbana, Ill., is being placed in condition. New machinery has been added to make the capacity 150,000 brick a day and to improve the quality of the brick.

The East Shore Brick Co., Haverstraw, N. Y., has been incorporated with $15,000 capital stock. Incorporators: Lawrence J. Murray, Thomas Gagan, Emma Murray, Mary T. Gagan of Haverstraw.

John Miller, the well known Washington, D. C., brick manufacturer has purchased the large brick yard near Riverside Park, Fairfax Co., Va. He will operate it in the future as well as his other plant.

The Morris (Okla.) Brick & Coal Co. has been incorporated with $30,000 capital stock. Directors are S. J. Allen, J. C. Smith, A. C. Free, of Okmulgee, W. E. Kittel and Bruce White of Morris.

The machinery for the American Vitrified Brick Co., Caney, Kan., is now being installed. A. A. Kentner, the manager, says when the plant is completed it will be one of the best in that part of the country.

The Tama (Iowa) Brick & Tile Co. capitalized at $20,000 has been incorporated. L. E. Bentley and S. D. Dye are the incorporators. They will improve and operate the tile plant run by C. B. Bentley & Son.

The Ouachita Coal & Clay Products Co. will hold a stockholders meeting at 606 Century Bldg., St. Louis, Mo., to vote on the proposition to increase the bonded indebtedness $75,000 with which to buy additional machinery and make improvements.

The Acme Clay Products Co., Alliance, Ohio, have sold enough stock in the company so that the plant will be a go. Capital stock, $50,000. Edward Turner is president; J. F. Matchett, vice president; W. W. Matchett, secretary, and W. J. Hanney, treasurer.

At a meeting of the Buffalo Center (Iowa) Brick & Tile Co., M. O. Skutle, president, C. E. Holcomb, vice president, C. W. Gadd, treasurer, Dan Kelly, secretary and E. D. Bucknam, manager, they have decided to buy additional machinery and are selling the unsold stock for this purpose.

CASH

For your Real Estate or Business. No matter where located if you want te buy, sell or exchange any kind of business or real estate anywhere at any price, call on or or, address,

FRANK P. CLEVELAND
1725 Adams Express Building,
Chicago, Ill.

HELP WANTED

Wanted, a competent foreman for the kiln end of a drain-tile plant employing 75 men. Must be able to do the burning with common-labor helpers.

Foreman, care Clay Record.
Chicago, Ill.

HUDSON RIVER BRICK PLANT

Will lease on easy terms a fully equipped two machine soft mud brick plant, large open yard. Immense bank of clay and sand. Dock frontage on deep water adjoining railroad. Houses, barn, kiln sheds, Engine & Boiler, etc. etc

Address RICK
Clay Record Chicago, Ills.

WANTED

A 25M capacity belt delivery, side cut table. Must be ready to do perfect work. No time to exchange letters—be frank, write exact conditions, make, how long used. Is it ready to do first-class work? Best cash price.

We are also wanting a disintegrator. Address
J. T. FOLSOM, Boonville, Ind.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

FOR SALE

One right-hand disc fan, complete with shafts and bearings.

One Atlas Engine, automatic, right-hand, 100 horse-power; used only two years. Address

Kankakee Brick and Tile Co ,
Kankakee, Ill.

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

FOR SALE

One splendid well equipped small brick plant. Good location; brick sells at $10 per thousand. Good small residence on property. Have contracted to make 300,000. Everything first class; wish to sell soon on account of other business. This plant can be bought very cheap and on good terms.

George Barney.
Lock Box 366, Leesville, La.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

Southern Brick & Tile Co.
Louisville, Ky.

MACHINERY WANTED

I am in the market for the purchase of 12 cylinders, 6 ft. 2 in. in diameter by 40 feet long; also a large number of hardening cylinder brick cars.

Address COLBY M. AVERY, Aurora, Ill.

FOR SALE
SECOND HAND MACHINERY

Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2¼ in. to 1½
One McGowan & Co. 6 in. to 6 in.
One Blake 6 in to 6 in.
One Erie Engine 75 h. p.
One No. 7 Dean 4in. to 6 in.
One Blake 3 in. to 4 in.
Two Cameron 3 in. to 4 in

Three Centrifugal pumps 4¼ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in. Buffulo Force Fans. One Stutervant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill One No, 2 and No 3 Mead Mill. Four 32 in and one 42 in. Munson Mills.

The above machinery has been used only a short time.

S. KRUG WRECKING CO.
Nebraska City. Neb.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS OAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, hio

BRICK MACHINERY FOR SALE CHEAP

One—125 H. P. Atlas Engine.
Two—80 H. P. Atlas Boilers.
One - 9 foot Raymond Dry Pan.
One—No. 77 Raymond Brick Machine.
One—Raymond Rotary Cutting Table.
One —10-ft. Raymond Pug Mill.
One—2 Cylinder Steam Hoist.
104—Steel Frame Dryer Cars with iron pallets.
Two—Transfer Cars, six tons, 12 lb. rails.

Five acres of good brck shale and cheap natural gas. Good reasons for selling.

Address: P. O Box 206
Iola, Kansas

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Beusing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32,000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12,000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address

J. M. CRABILL,
Clarenda, Iowa.

FOR SALE OR LEASE

Good soft mud brick plant in city of 10,000 in Indiana; capacity 25,000. Will be sold at a bargain on easy terms; good reasons for selling. Aydress

R 5, care Clay Record,
Chicago, Ill.

MACHINERY FOR SALE

One 3-Mold Boyd Dry Press.
One 3-Mold Andrus Dry Press.
One 2-Mold United States Dry Press.
One Freese Stiff Mud Machine—A special.
One Standard Board Delivery Cutting Table.
One Freese 8-foot Pug Mill.
One "Centennial" Stiff Mud Brick Machine.
One Fernholtz 42-inch Pulverizer.
One 6-foot Iron Frame Mixer
One Chandler-Taylor 10x12 Steam Engine, good as new.
One 8x12 Steam Engine. Good condition.

SCOTT MANUFACTURING CO.,
Third National Bank Bldg. St. Louis, Mo.

FOR SALE CHEAP

One Clay Pulverizer revolving style like Fernholtz. Almost new, made by Scott Mfg. Co. St. Louis, Mo. Address

Lewis Electric Light Co.
Lewis, Iowa

CLAY AND COAL FOR SALE OR LEASE

Have 1,500 acres of the celebrated Carter Co. fire clay and coal land to sell very reasonable or lease on royalty. Three veins of fire clay and one three and one-half foot of coal in same hills at Denton, Ky., on line of two railroads.

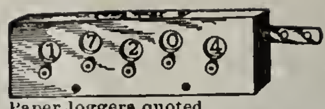
Fine prospect for oil and gas.

Address: J. H. BURDETTE,
622 West Caster Ave.,
Ashland. Ky.

BOOK WANTED

Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

Book, care Clay Record,
Chicago, Ill.



No better made, cut iron
$8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.

Paper Joggers quoted. Sold by all dealers
R A. HART 41 White St., BATTLE CREEK

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machine; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

INVEST IN PRESSED BRICK AND TILE PLANT

In Hope, Arkansas, where we have four railroads in operation and two other lines building.

Hope is ninety-three feet higher than the city of Little Rock, has a population of 5,303 and is steadily growing. We have good health and the finest of water

Abundance of shale on St. L. I. M. & S. Ry., in edge of Hope; I have samples of brick to show test of shale, though you should come and test it yourself if interested.

Good mud brick plant here but no other clay plant of any kind, above is needed, large territory to supply.

Reliable brick maker will invest $2,000.00 and take charge if you wish.

A. P DYKE,
Hope, Arkansas

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio.

Address A. B. care Clay Record,
Chicago, Ill.

FOR SALE

One 9-ft. dry pan, made by the American Clay Machinery Company. This pan is as good as new, having been used only about 60 days. Write for price to

The Alpena Portland Cement Co.,
Alpena, Mich.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

5000 brick Pallets 10½ by 32 inches, kiln shutters and grate bars Address

Jno. Brill Jr.
2580 Madison Ave.
Indianapolis, Ind.

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana,"
Care Clay Record, Chicago, Ill.

FOR SALE

Second-hand No. 5 Nolan & Madden machine with tile dies 4 to 8 inches, and new cutting table. Machine in perfect order.

Second-hand No. 2B Mich. B. & T. Machine Co. machine with tile dies 3 to 8 inches, cutting table, side cut brick die and table. Will sell these machines cheap; address

J. F. CLARK.
Morenci, Mich.

BANKRUPTCY SALE

In the District Court of the United States for the Eastern District of Pennsylvania.

In re Montello Brick Works, bankrupt. In bankruptcy, No. 2922. Pursuant to an order of sale granted by Samuel E. Bertolet, Esq., Referee in Bankruptcy, on May 16, 1908, the undersigned will expose at public sale or auction, on Thursday, March 18, 1909, at 10 o'clock a. m., on the premises of the Montello Brick Works at the plant known as the "Oak Factory," at Perkiomen, Upper Providence township, Montgomery County, Pa., the buildings and entire equipment of said "Oak Factory," consisting of 1–600 H. P. Corliss engine; 1–250 H. P. Corliss engine; 1-80 H. P. twin engine; 1–50 H. P. engine; 1–20 H. P. engine; 4 Heine boilers, 250 H. P.; 4–60 H. P. Western Electric Co. dynamos; 4 switchboards; 4 pug mills; 4 Chamber's Brick Machines; 10 dry pans; 14 transfers, 10 turntables; No. 1 kiln; No. 2 kiln; 2–6 ft. fans; 5–7 ft. fans; 1–12 ft. fan; 4–7 ft. blower fans; 1–16 ft. blower; 1 large air compressor; 2 small air compressors; 2 vacuum pumps; 1 fire pump; 1 pulsometer pump; 2 deep well pumps; 5 fuel oil tanks; 2,380 brick cars; 5 5 tons 30, 40 and 70 lb. steel rails; shafting; hangers; pulleys, elevators; elevator screens; 4, 5, 6, 8. 10 and 12-inch canvas belting; 1½, 2, 2½, 3, 4 6, 8, 10, 12, 24 and 48-inch leather belting; 8, 12, 14 and 20-inch rubber belting; 2 large Marion steam shovels; large amounts of scrap iron and numerous other articles composing what is generally conceded to be the best equipped brick plant in the world. This property will be offered as a whole and in parts. Complete catalogue mailed on request.

On Friday, March 19, 1909, at 2 o'clock p. m., at the Wyomissing Plant of the bankrupt, at Wyomissing, Berks Co., Pa., one Thew steam shovel.

Terms: 20 per cent cash on days of sale. Balance to be paid in cash on approval by the Referee of sales.

All to be sold as the property of the Montello Brick Works, bankrupt.

EDWARD D. TREXLER,
Trustee of the Montello Brick Works, bankrupt
25 N Sixth St. Reading, Pa.

D. Thomas Kunkel, Auctioneer
Harry F. Kantner, Attorney 25 N. Sixth St., Reading Pa.

VON OVEN COMPANY

Frederick W. von Oven, Manager

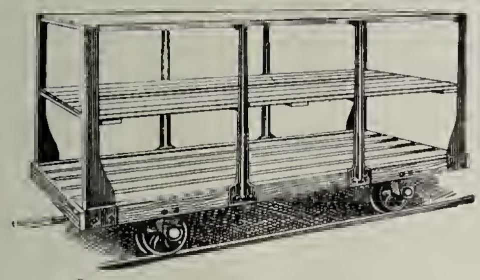
Consulting and Contracting Engineers

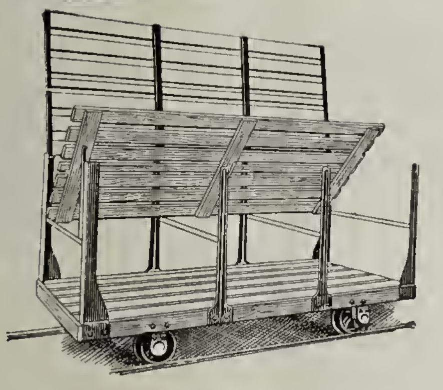
Gas Producer Installation.
Furnaces and Kilns.
Filter Presses.
Steel Mill Building Construction.
Designs for Special Constructions.
Von Oven Marking Device for
Green Clay Articles.

135 Adams Street, Chicago, Illinois
Room 1102

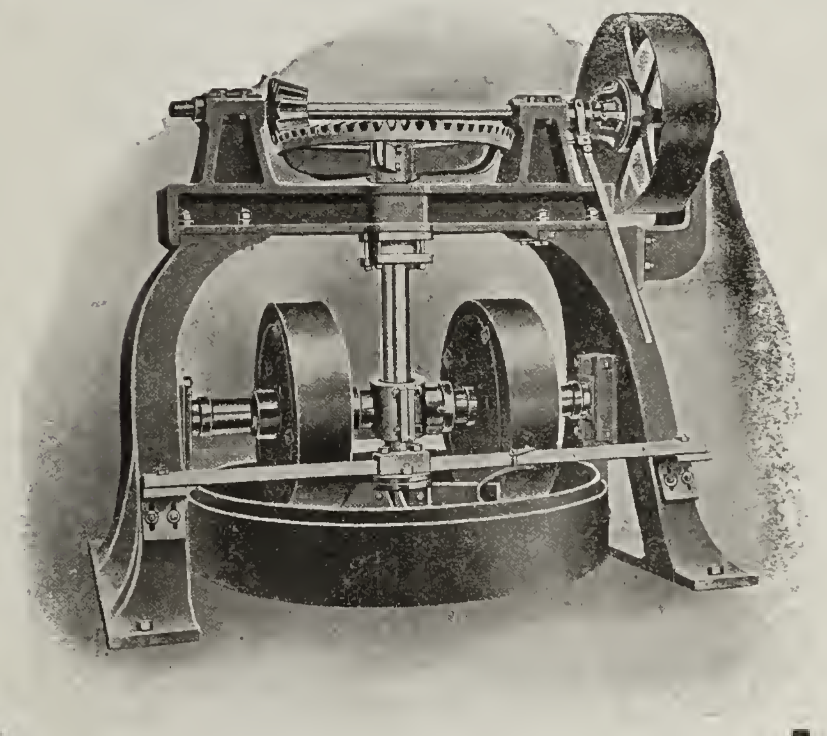
The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA



PHILLIPS & McLAREN CO. PITTSBURG, PA.
BUILDERS OF
Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand Terra Cotta and all kinds of Refractory Materials.
ROCK AND ORE CRUSHERS

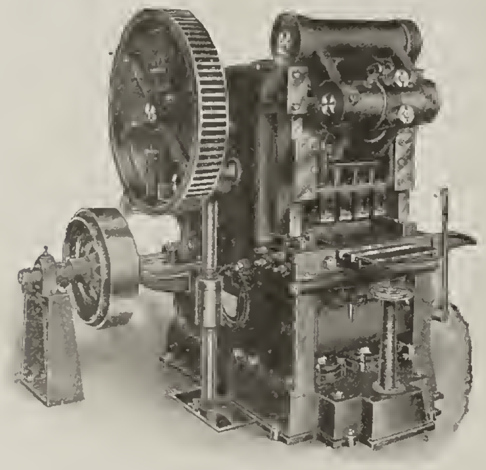
When writing for prices state kind of material and capacity required.

Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

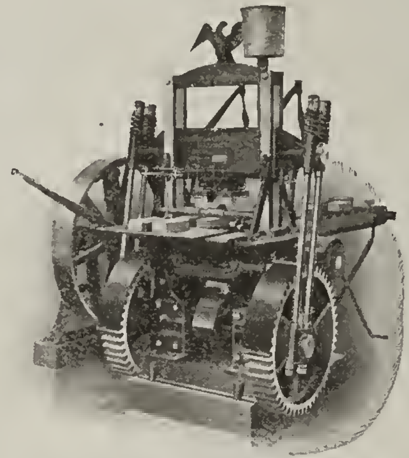
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

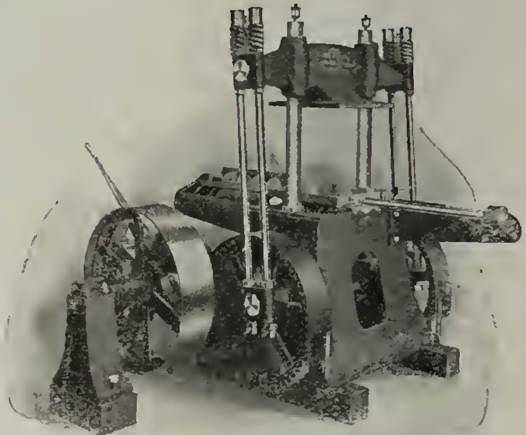
BUCYRUS OHIO, U.S.A.



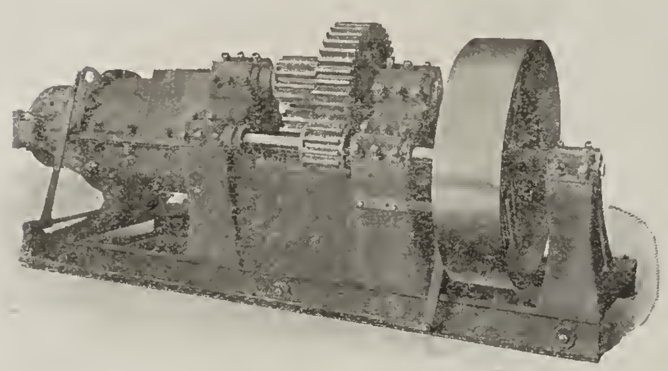
Model "B" Dry Press



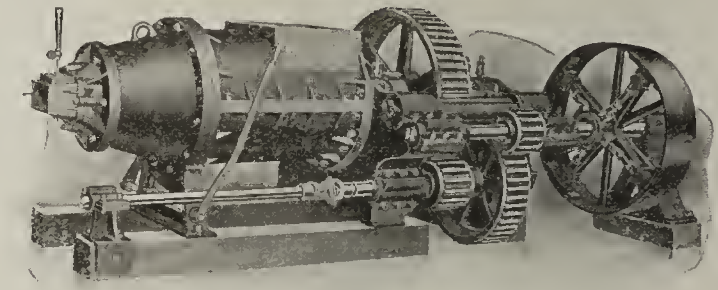
Eagle Repress



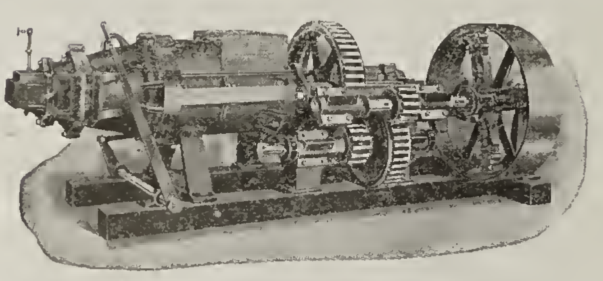
Roofing Tile Press



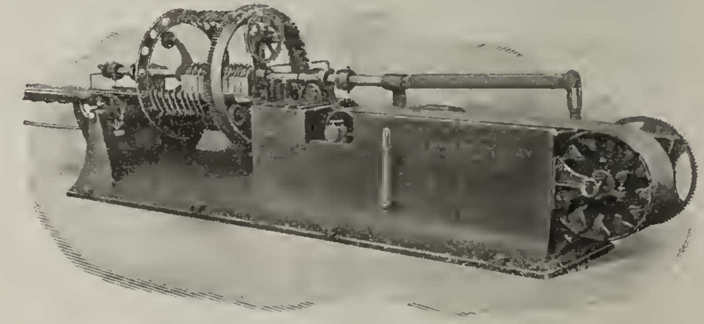
No. 65 Auger Brick Machine



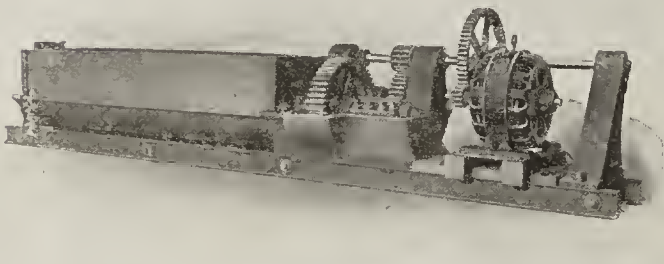
Special Giant Brick Machine



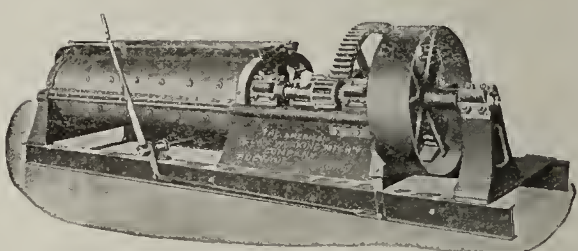
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



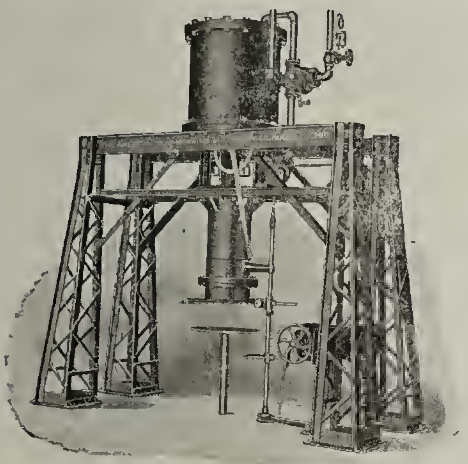
No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

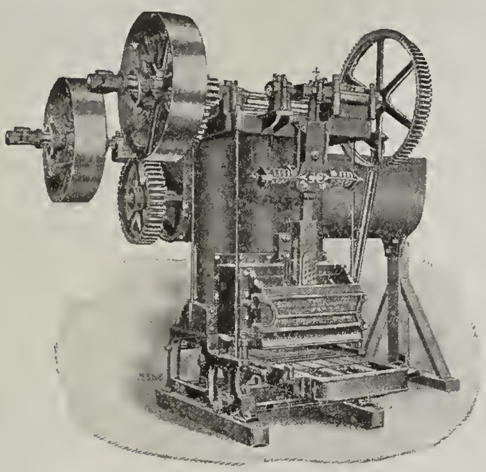
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

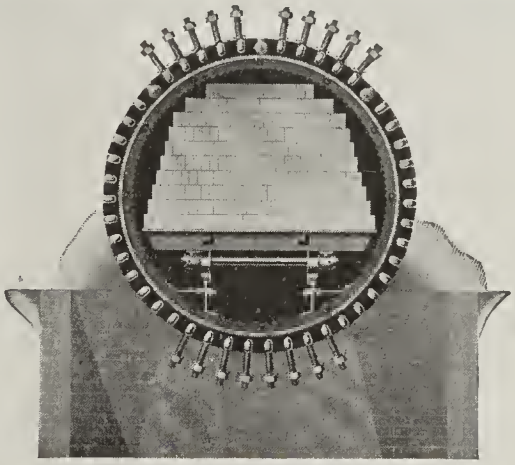
BUCYRUS OHIO, U.S.A.



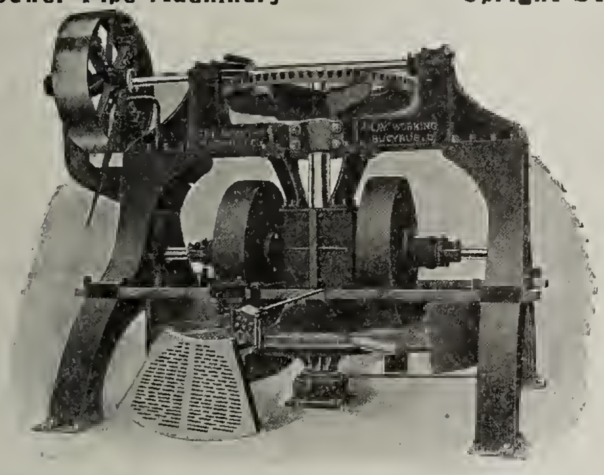
Sewer Pipe Machinery



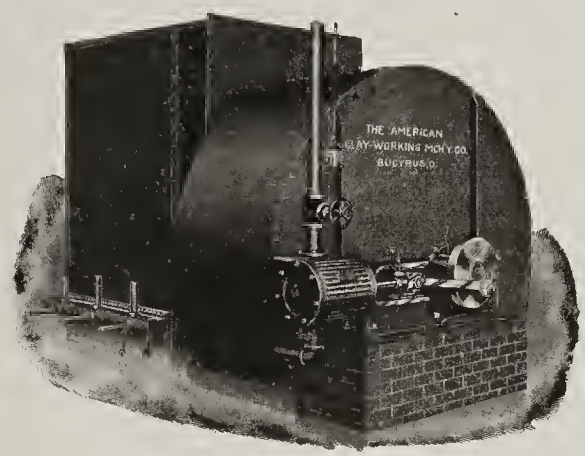
Upright Stock Brick Machine



Sand-Lime Brick Machinery



9 Foot Dry Pan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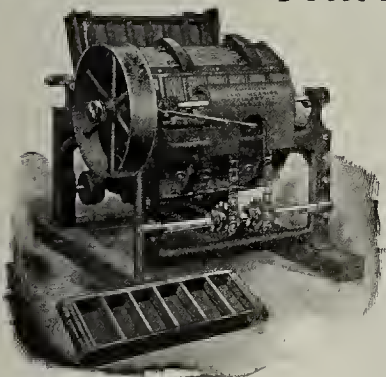
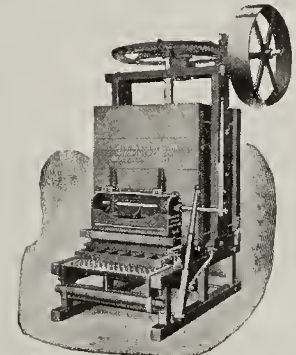
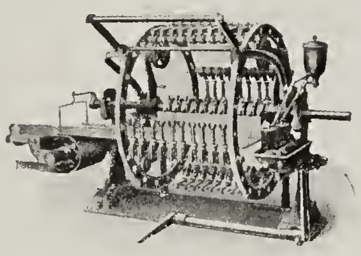


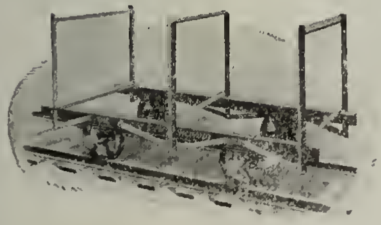
Mold Sander



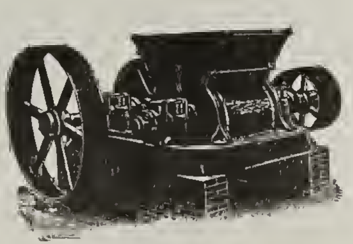
H. P. Brick Machine



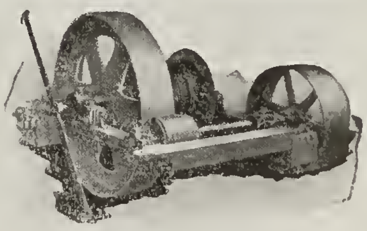
No. 62 Hand Power Cutter



Dry Cars



Disintegrators



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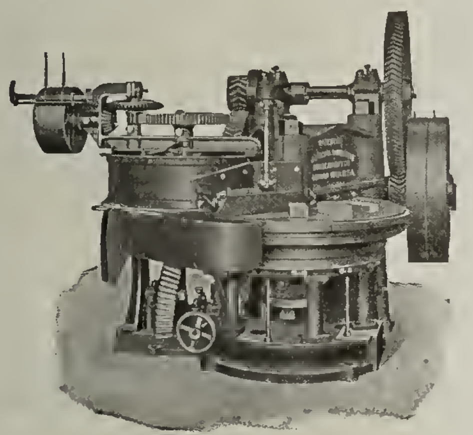

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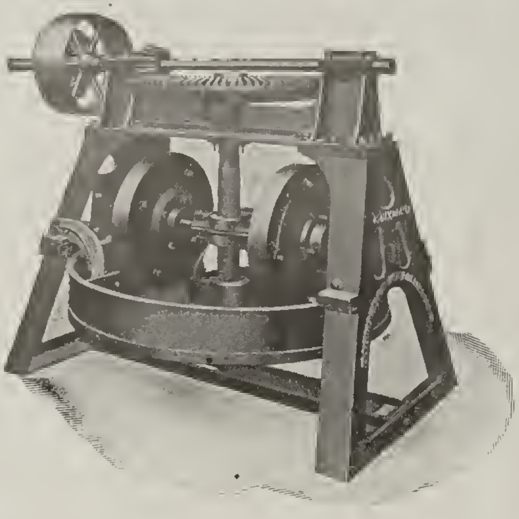

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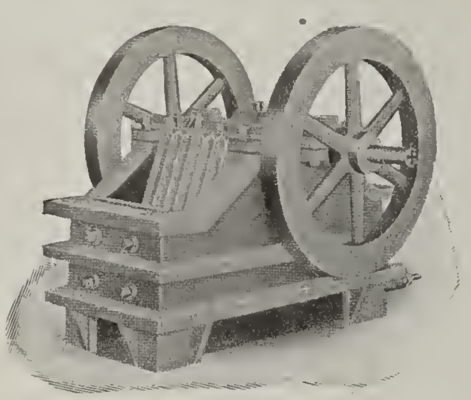

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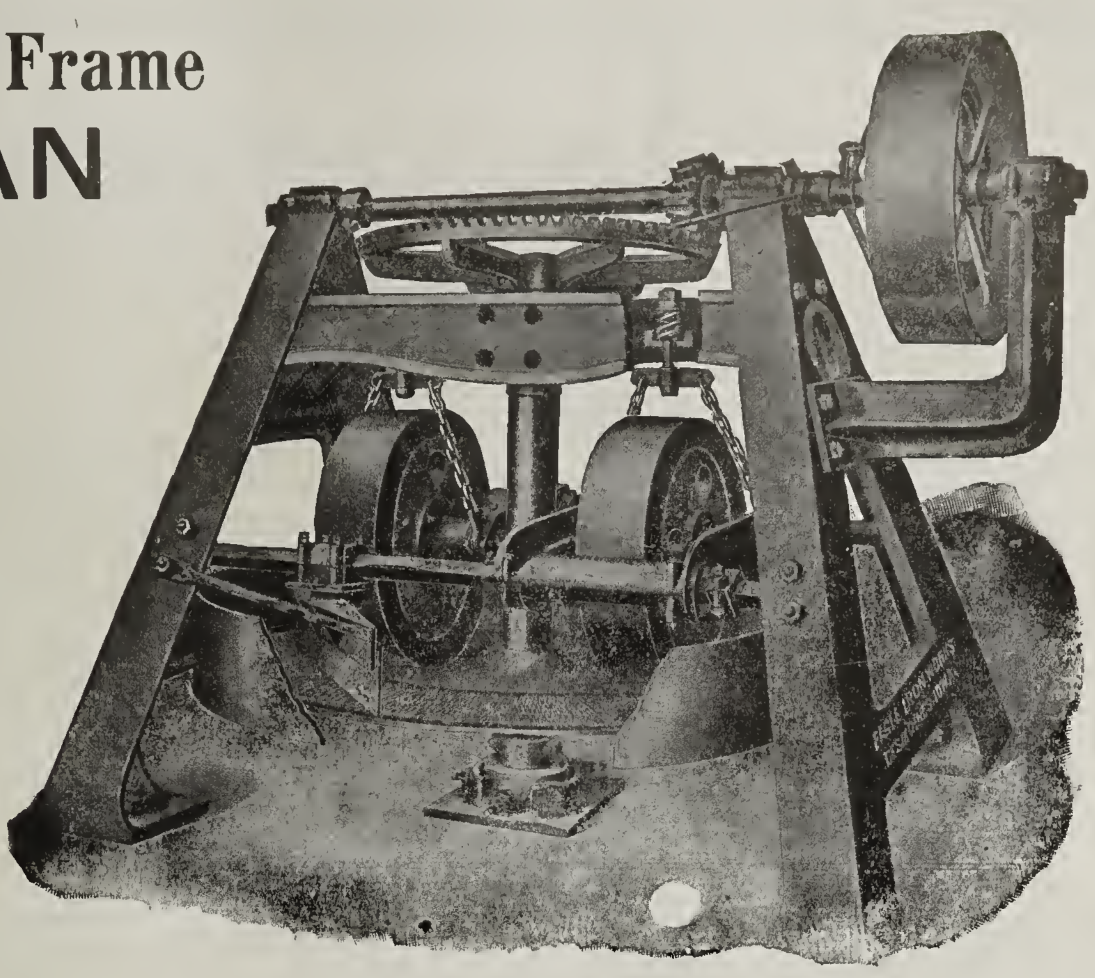

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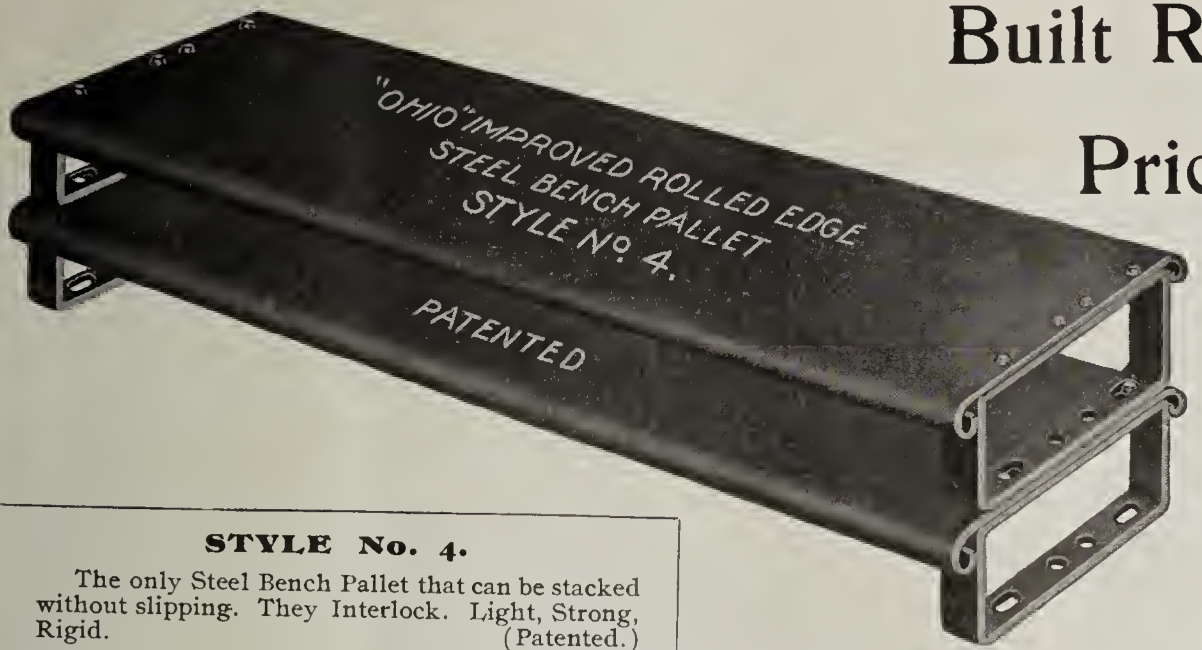

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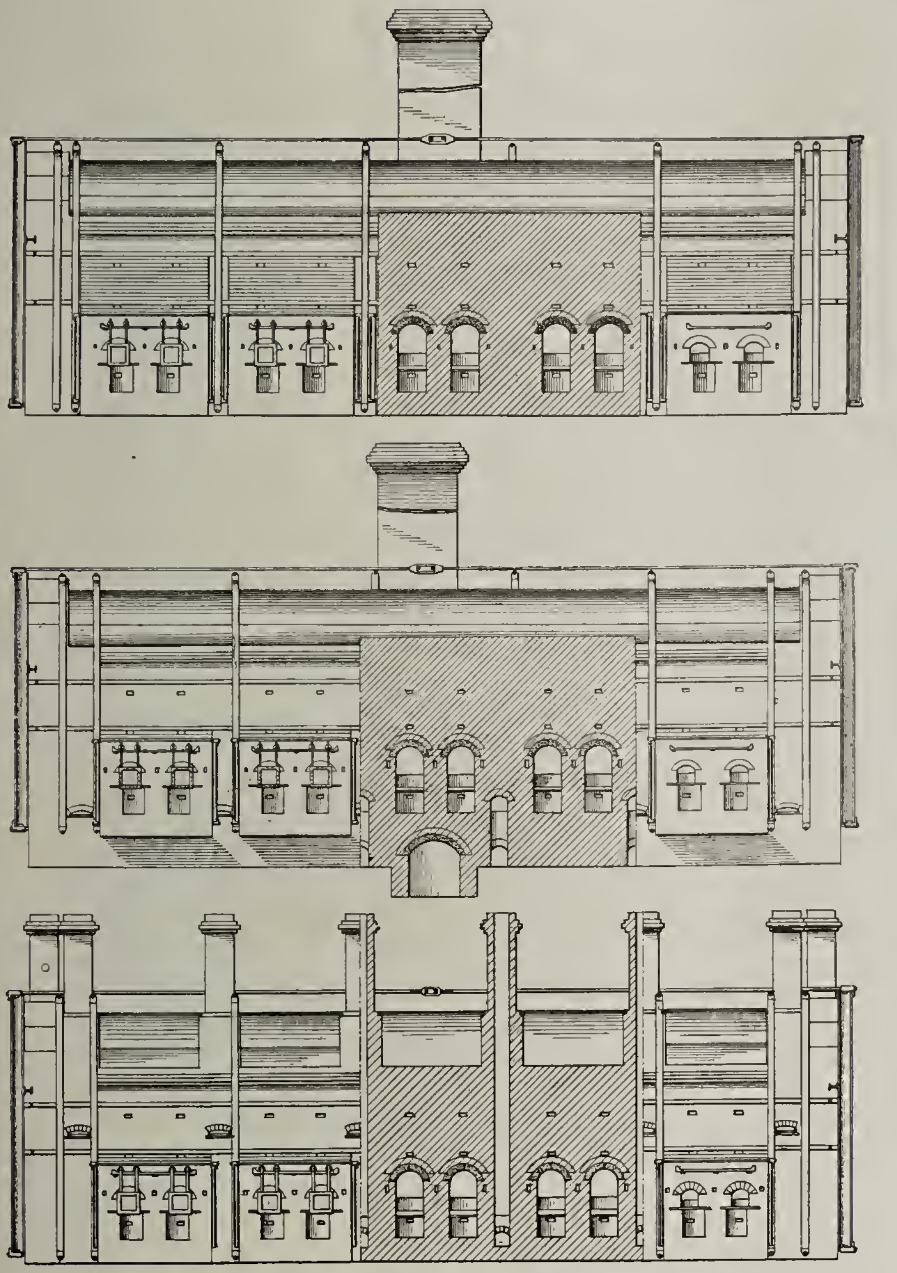
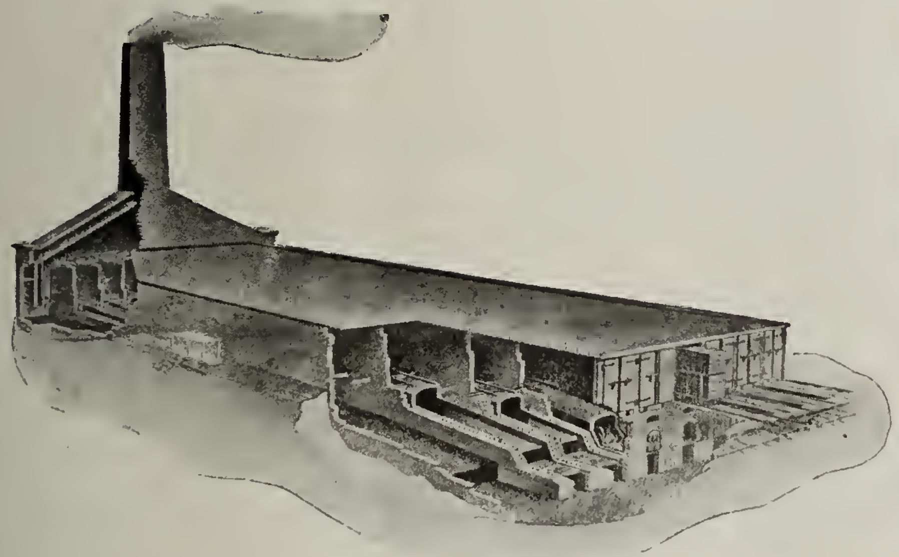


Patented July 8, 1902. No. 704418



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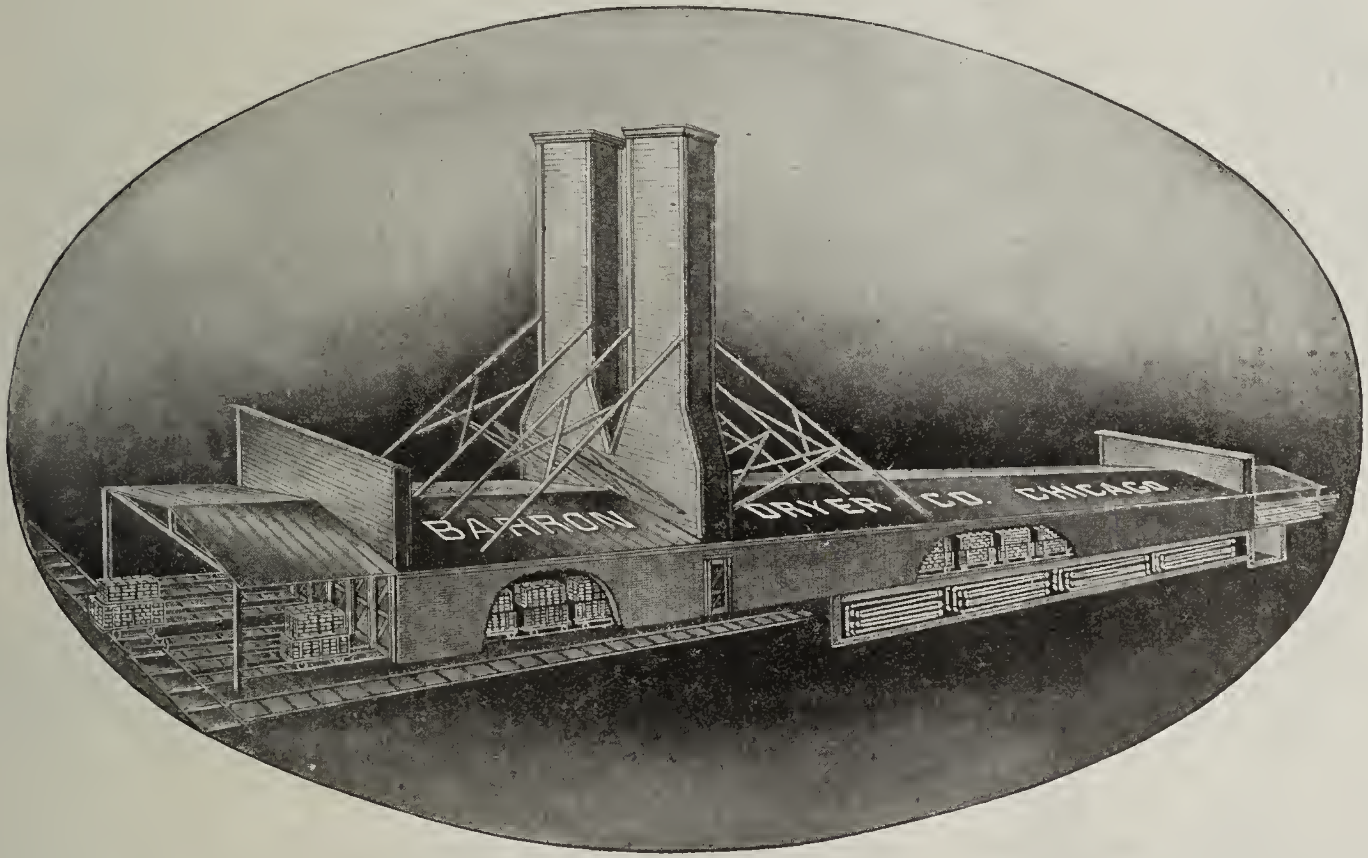

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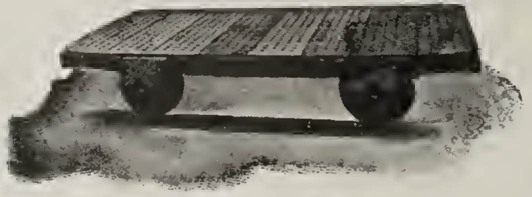
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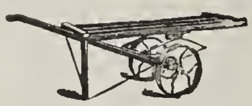
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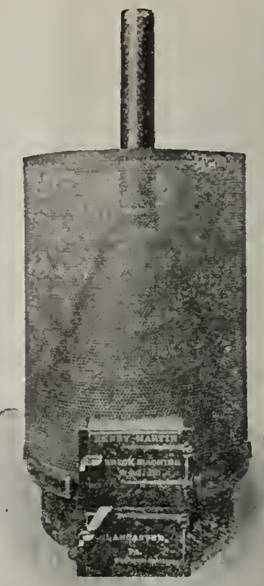
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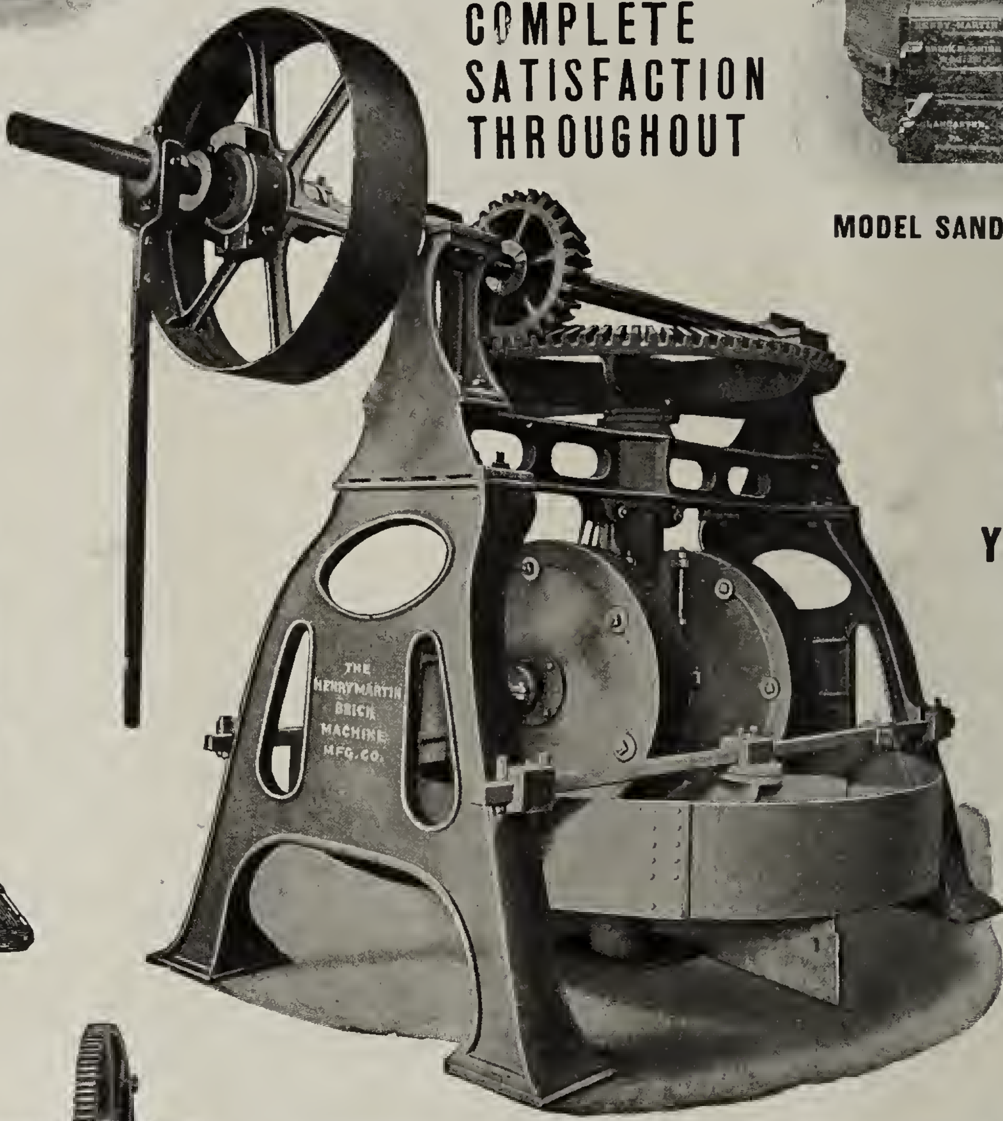

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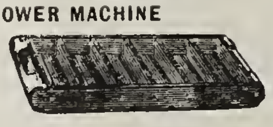
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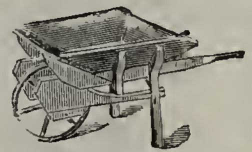
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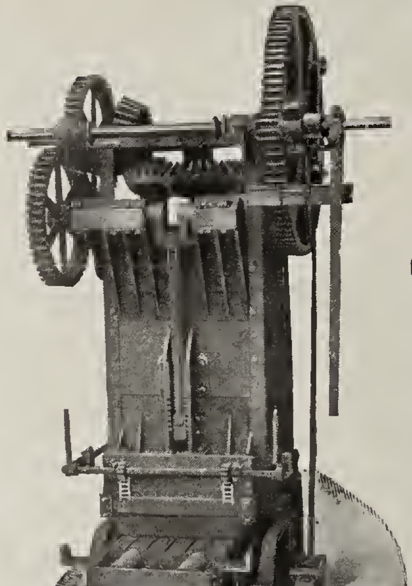
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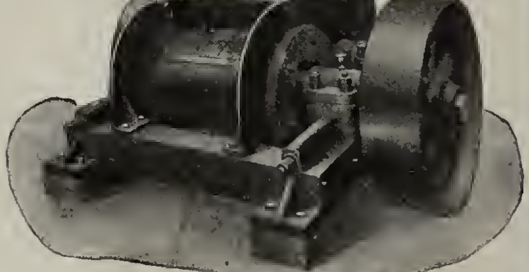
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LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

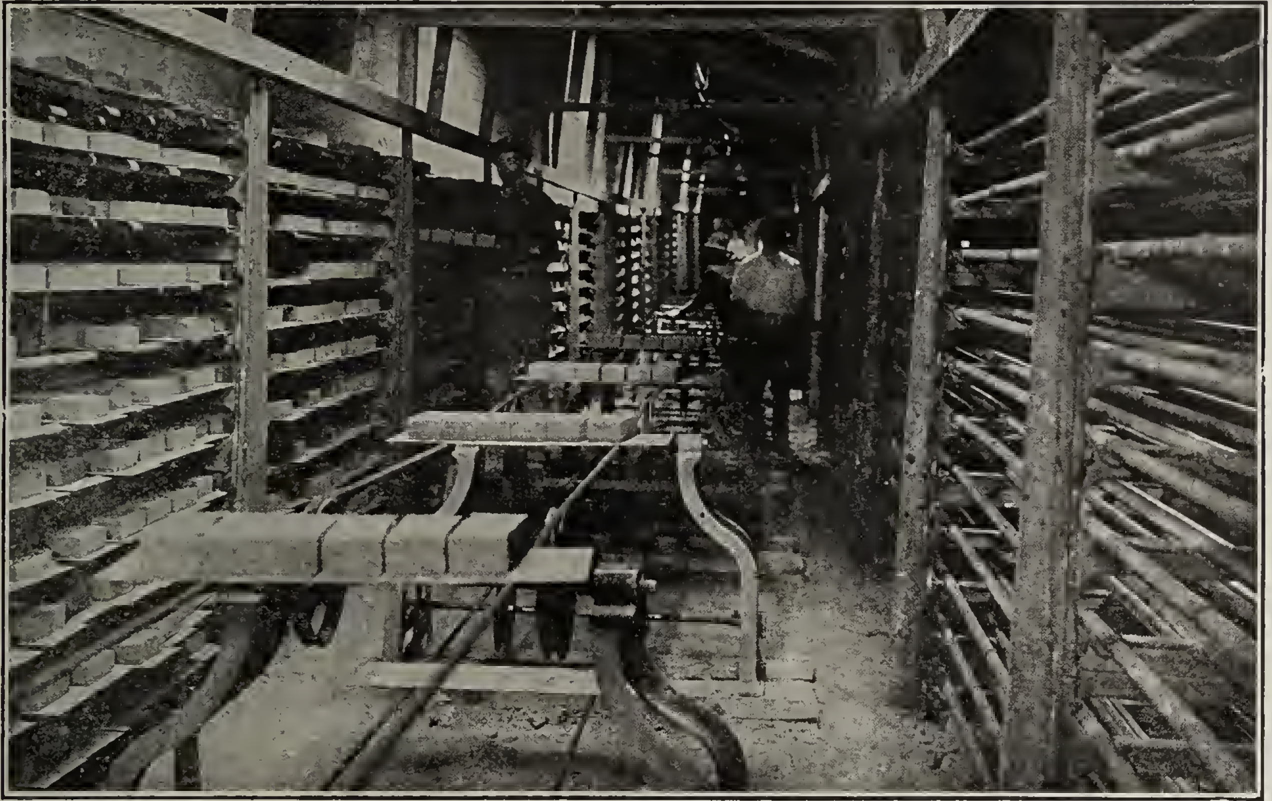
PATENTED

February, 22d, 1898.	No. 599509
October 10, 1905.	No. 95520
November 14, 1905,	No. 804489
May 26, 1908.	No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞



☜ LABOR SAVING THROUGHOUT ☜

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

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LANCASTER, PA., U. S. A.

HANDLE YOUR CLAY WITH ONE MAN AND **The Thew Steam Shovels**

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

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Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

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Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

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LORAIN, OHIO

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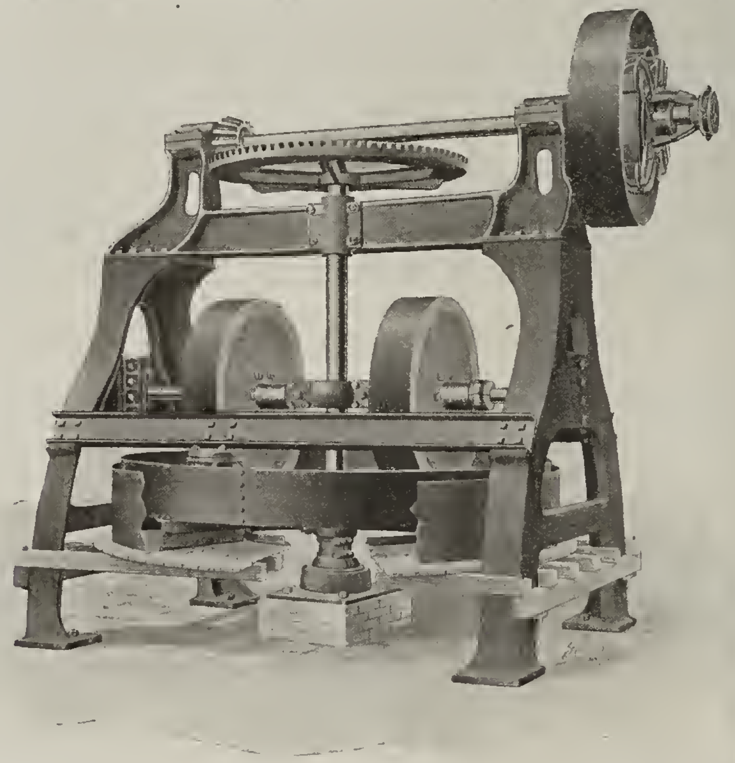

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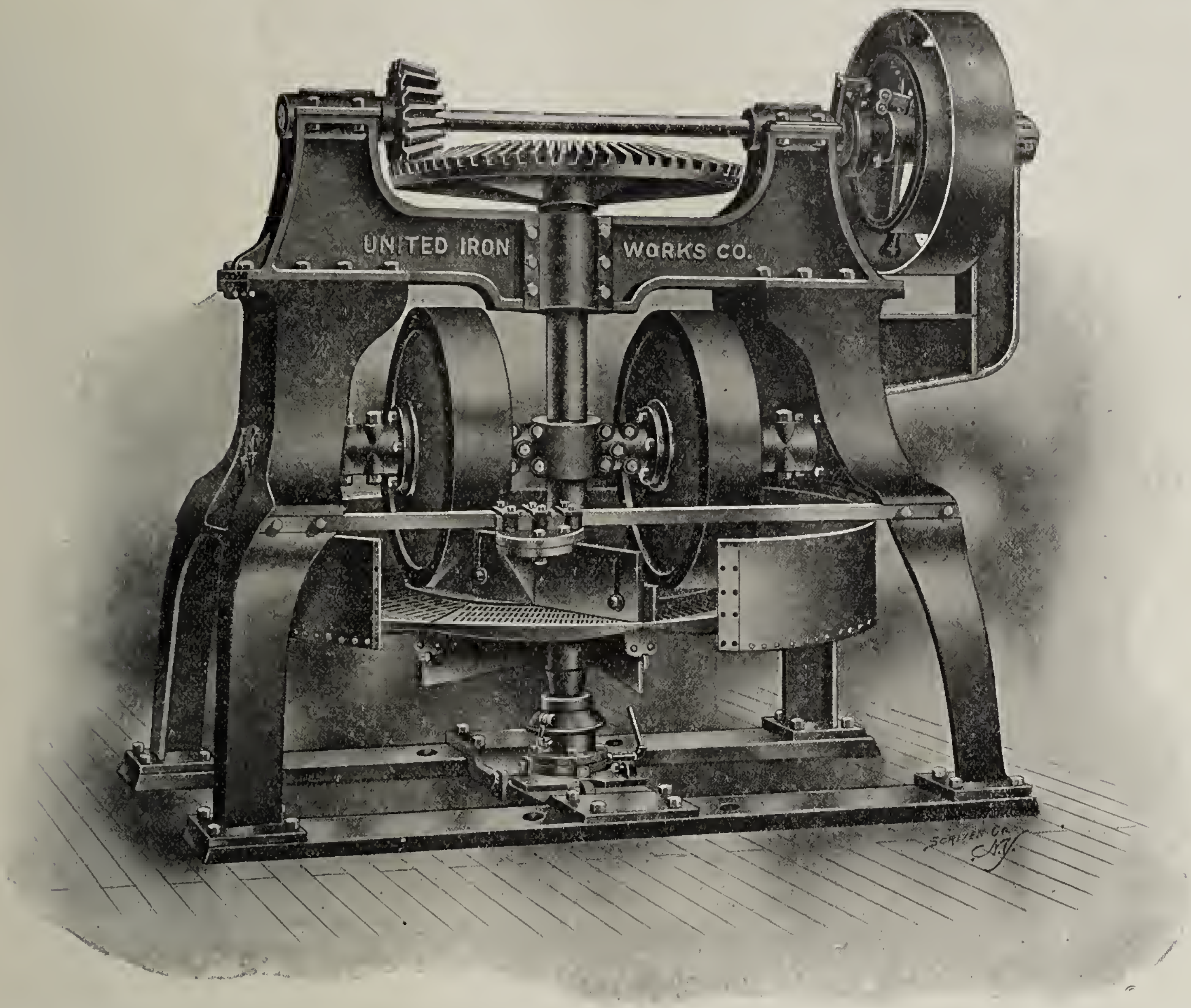
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WORKS CO.
SCRIVEN CO. N.Y.

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"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

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And they Backed up their statement by ordering recently THREE MORE Pans from us

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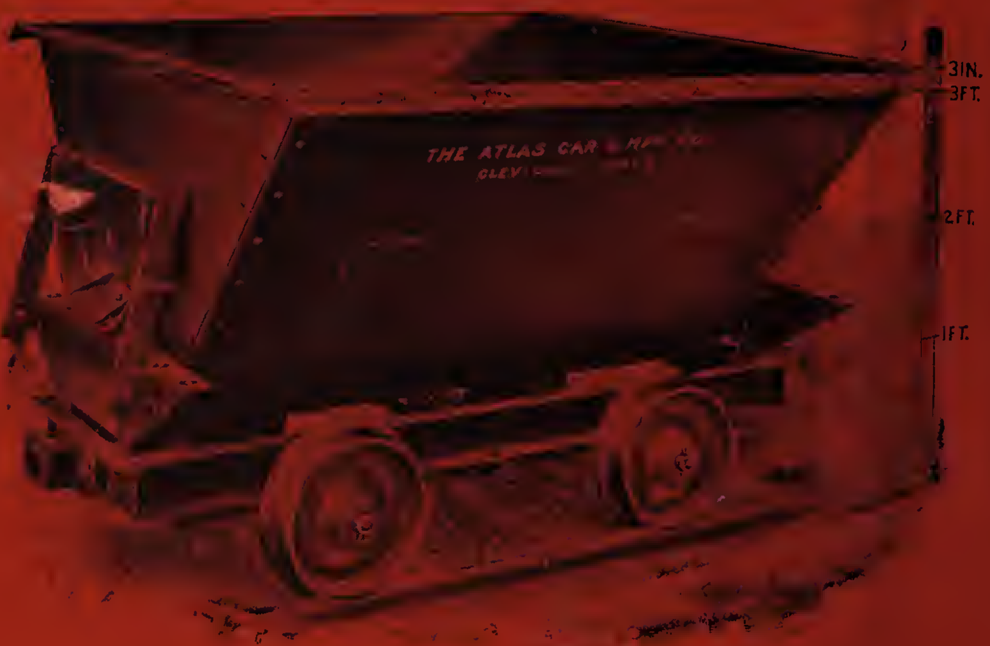
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Cable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.



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Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
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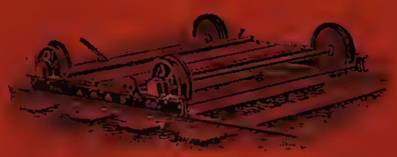

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NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.
CLEVELAND, OHIO

Vol. 34 No. 4

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
PERTAINING
TO THE
CLAY
INDUSTRY

February 27, 1909

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The Youngren Gas Fired Continuous Kiln

Announcement

We are pleased to announce to the Brick Making World that we have taken over all patents of the late *Peter L. Youngren* of Milwaukee, Wisconsin, covering the *Youngren Gas Fired Continuous Kiln* and all other types of the Youngren Kiln.

The success of this kiln is now most thoroughly established. All who are interested in the installation of the *Youngren Producer Gas, Gas Fired Continuous Kiln* are invited to consult us for particulars regarding construction, operation and contracts of same.

The C. W. RAYMOND CO.
Dayton, Ohio, U. S. A.

We issue the following publications which may be obtained upon application to our Publicity Department.

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"Smiles"
"Old Methods Discarded"
"Dry and Why"

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2040—Heavy Duty Dry Pan.
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2046—Conveyors.
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2053—Bevel Geared Pug Mills and Granulators.
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2061—Dry Press Machinery.
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EXHIBITS

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2070—No 3 Daytonian Brick Machine.
2075—Universal Semi-Automatic Cutter.
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2085—Hand Dry Press.
2086—End Cut Cutting Table.
2087—"777" Brick Machine.
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EXHIBITS

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2091—Cup Elevators.
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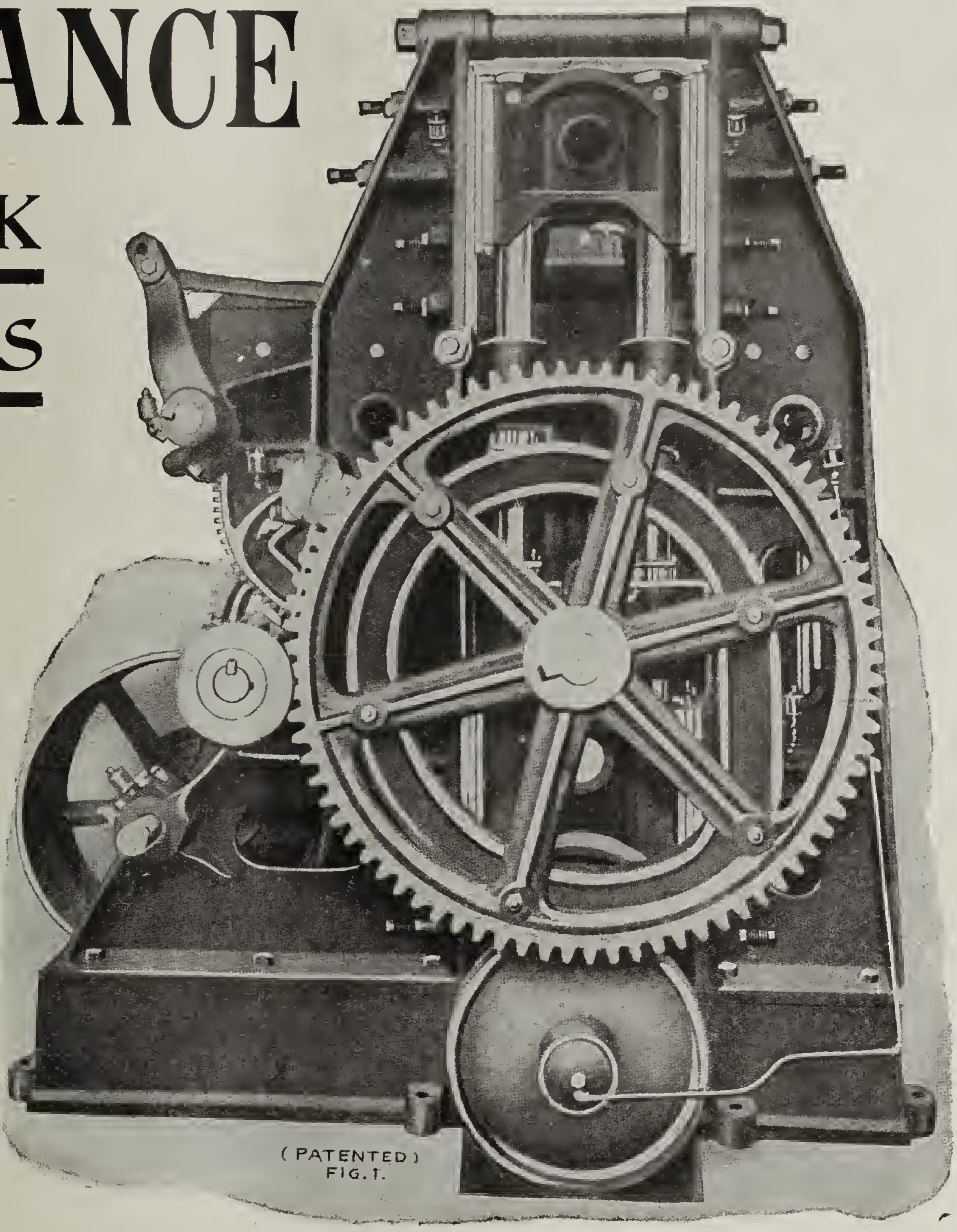
BRICK PRESS



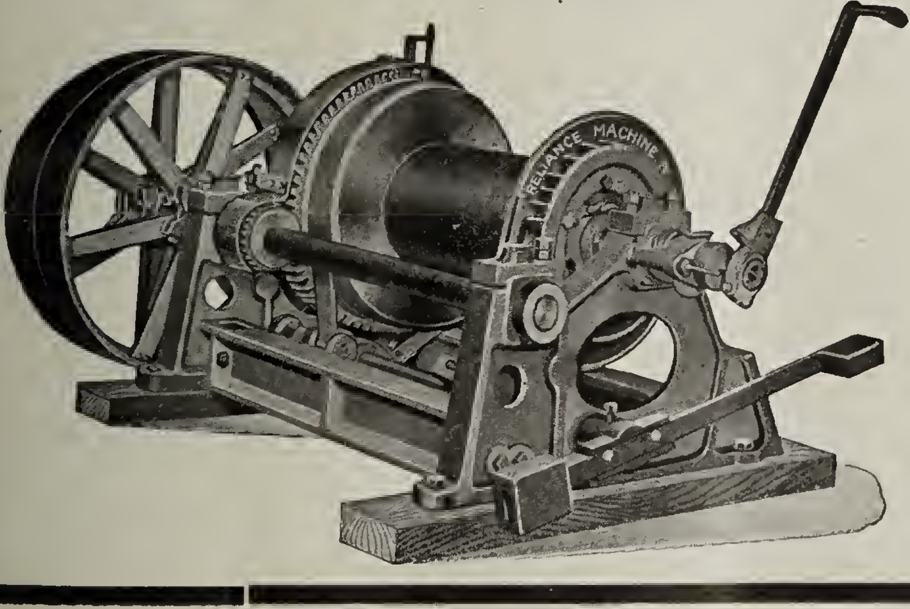
(PATENTED)
FIG. 1.

The Only
Machine Making
Brick Without
Granulated Centers

No Toggles
Powerful
Simple

We Design and Equip
Dry Press Brick
Plants Complete

Improved Reliance Friction Drum Hoist



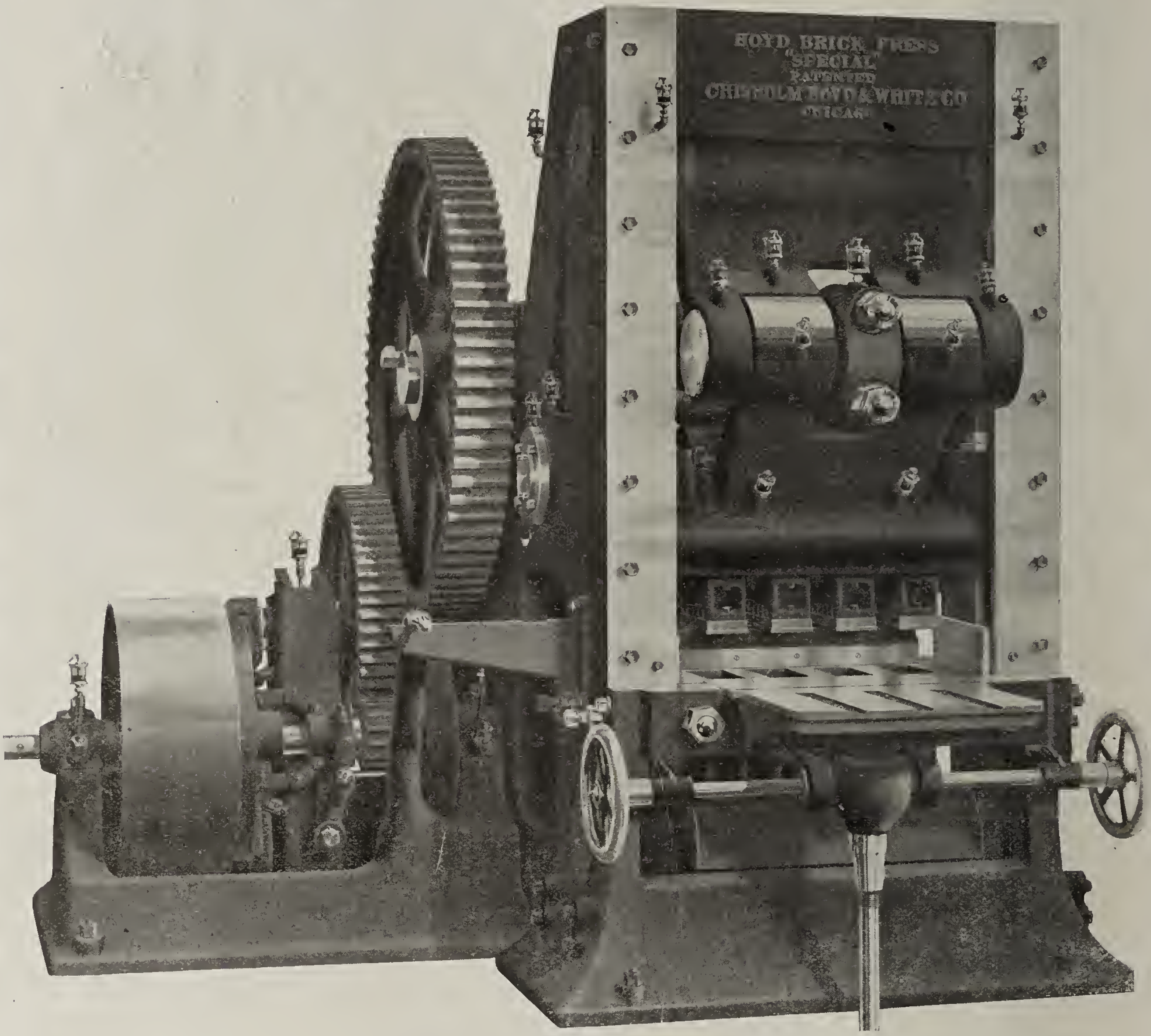
STEAM OR BELT DRIVEN

Specially Adapted to
Service in Clay Plants

RELIANCE MACHINE and
TOOL WORKS, St. Louis, Mo.

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

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Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

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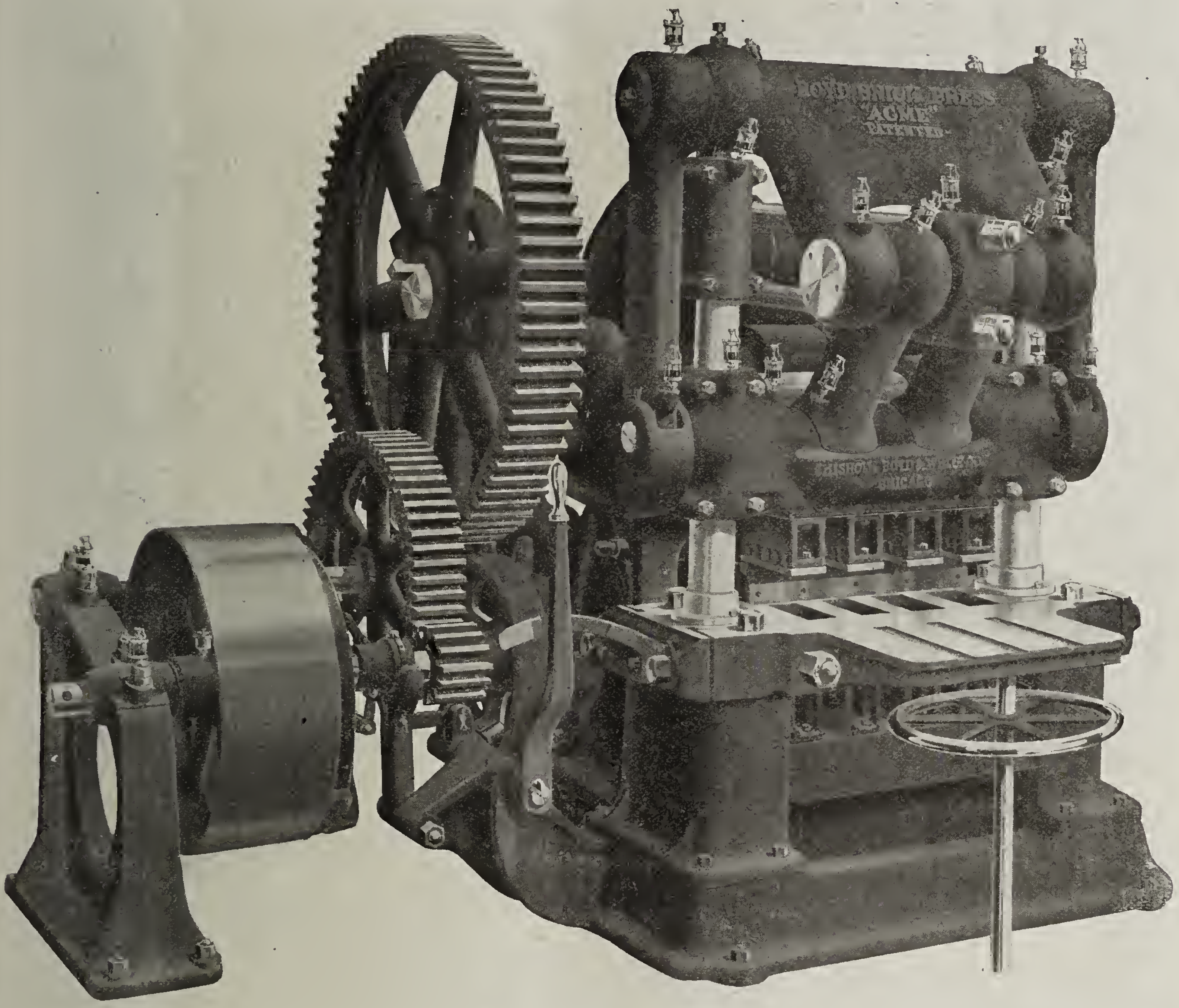

FOUR-MOLD "ACME"

Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

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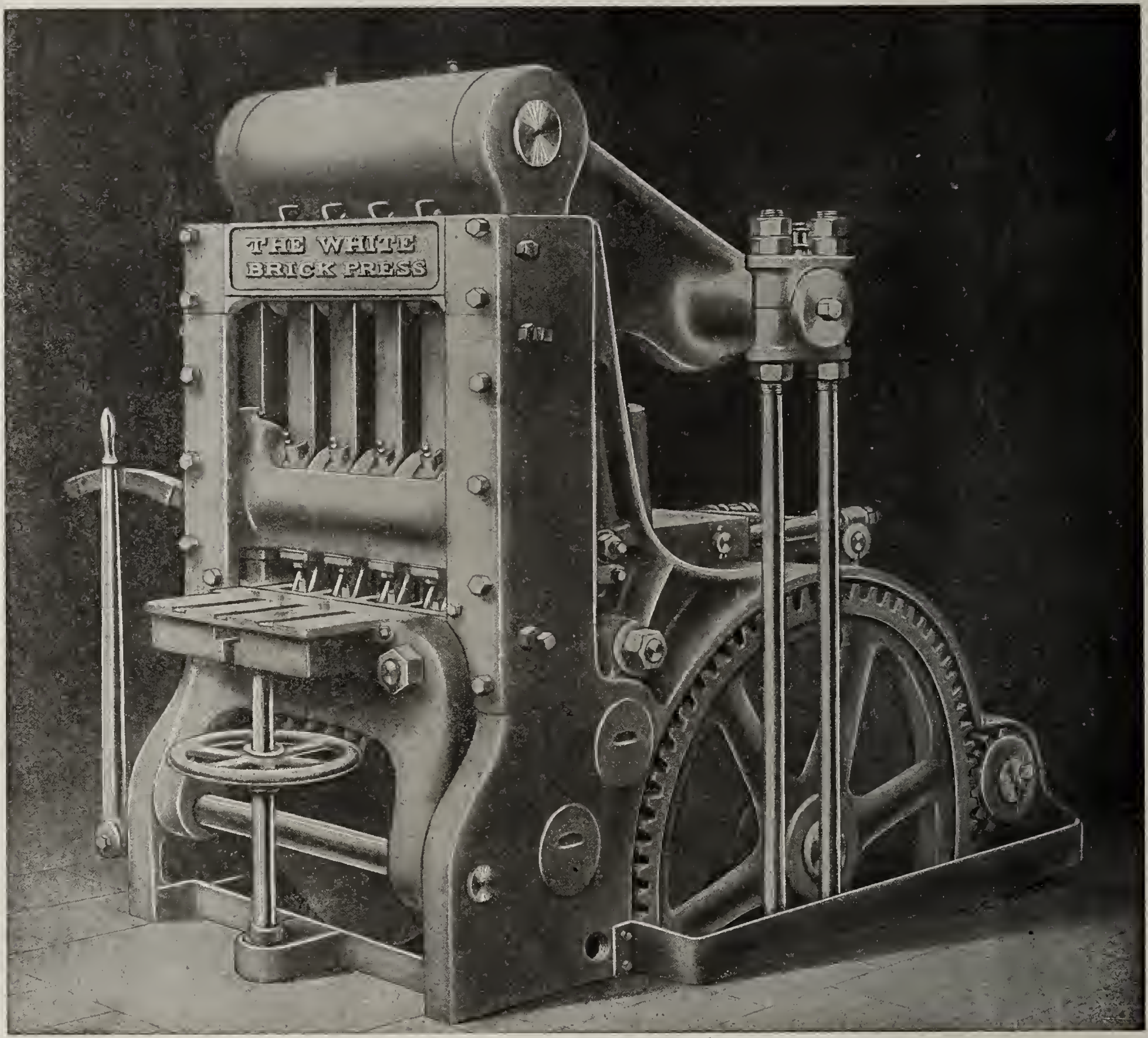
ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

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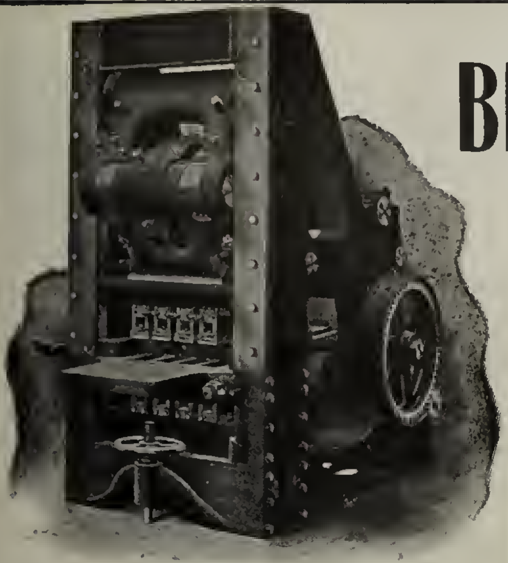
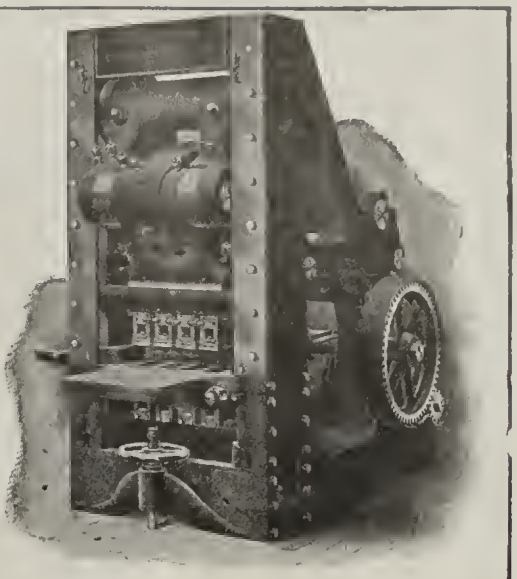
CHICAGO BRICK MACHINERY CO.
1308 GREAT NORTHERN BUILDING, CHICAGO



BERG BRICK PRESS

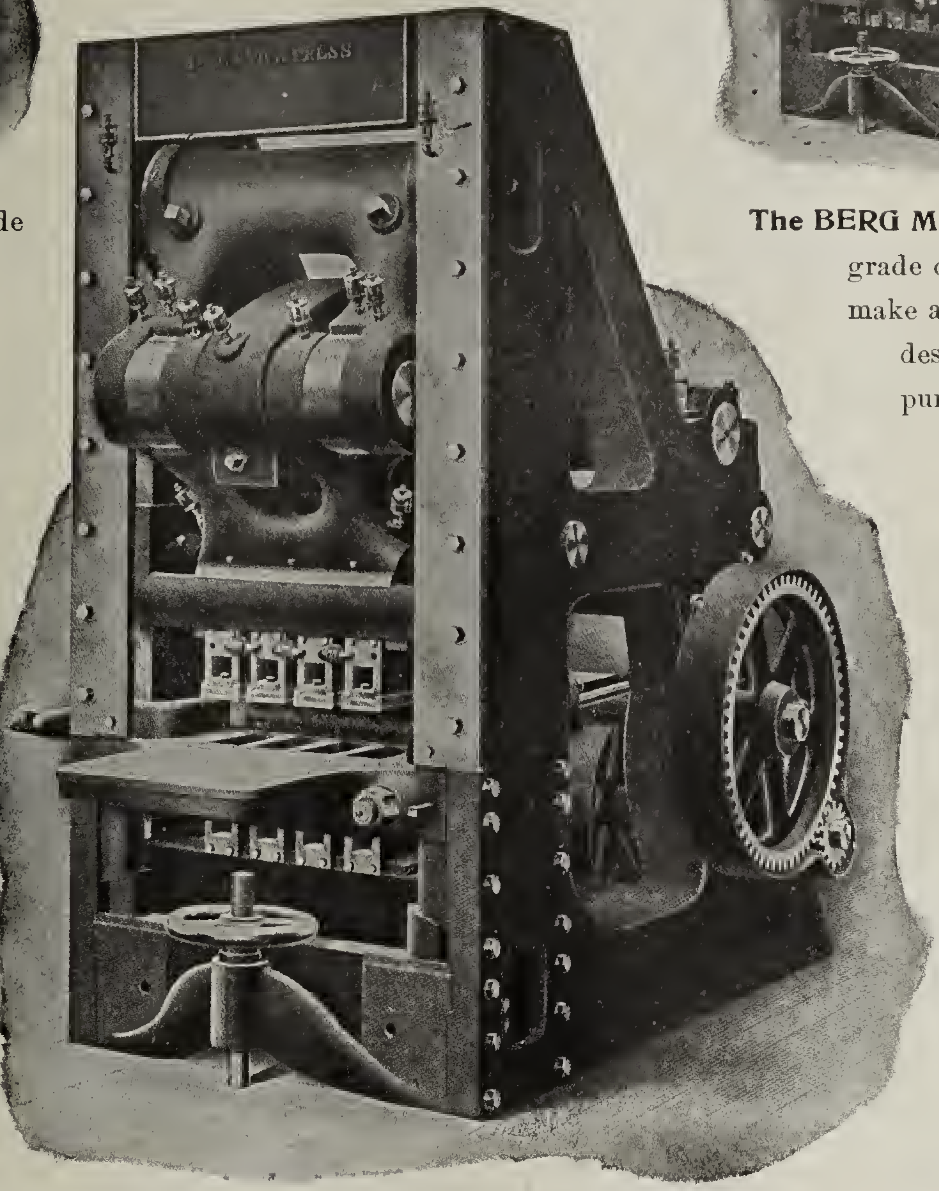
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.



The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

First-Class Workmanship. Cut Gearing. Fully Warranted.

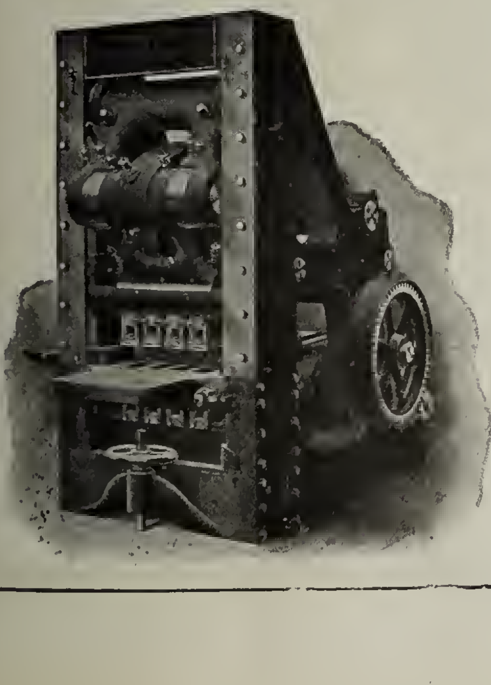
The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.



The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.



The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, exclusively. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address

A. BERG & SONS
OFFICE: MANNING CHAMBERS
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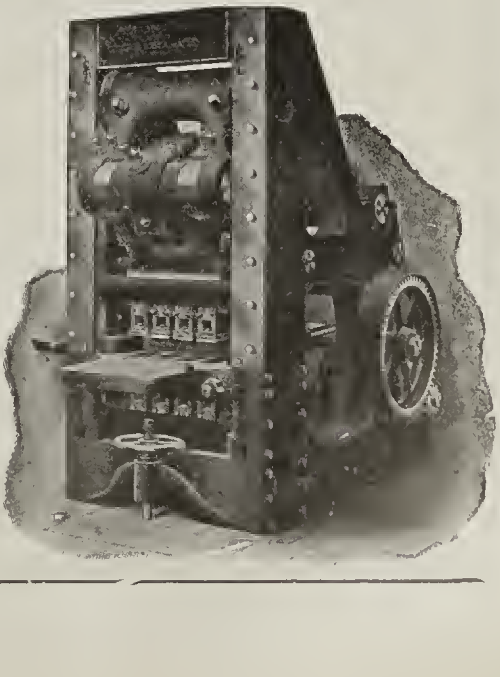
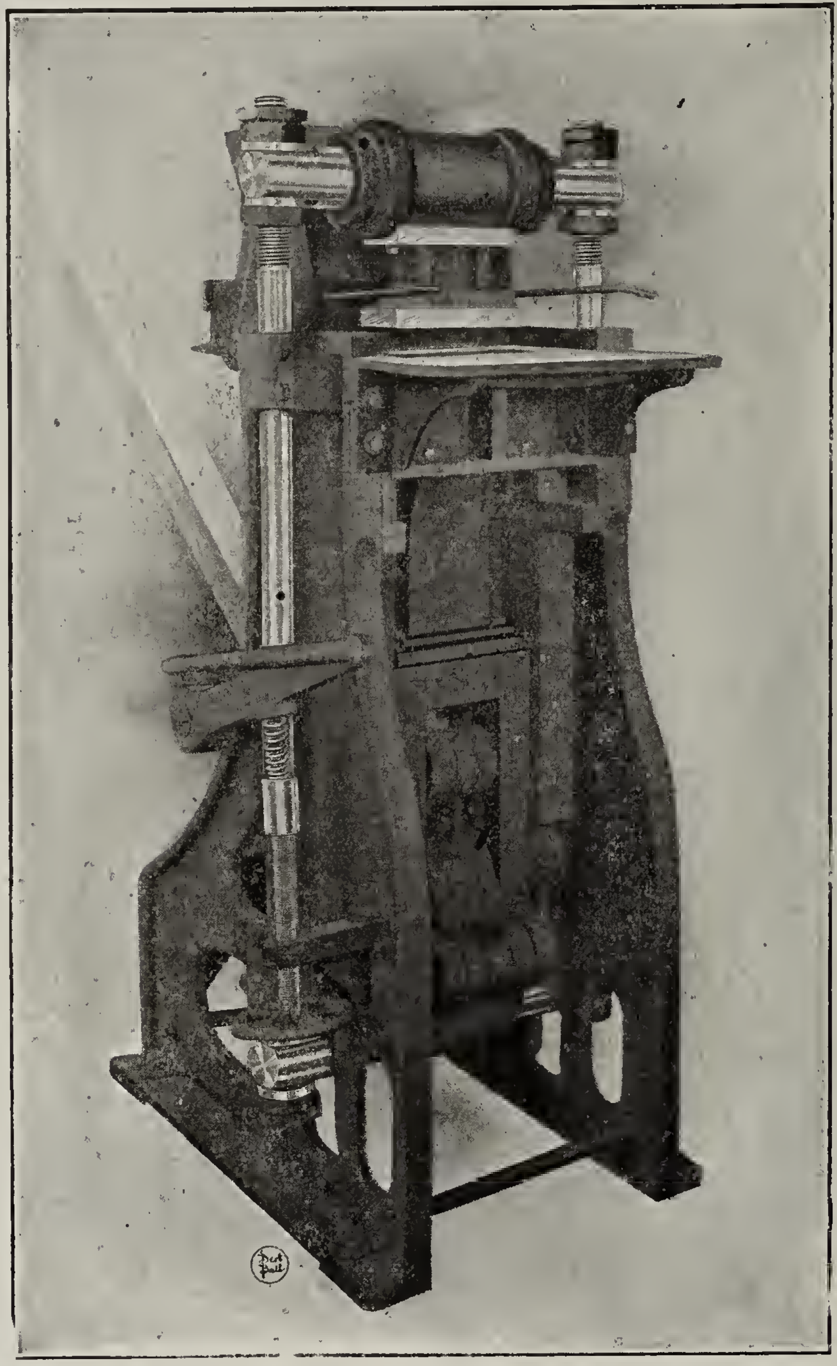


THE FERNHOLTZ BRICK MACHINERY CO.

MANUFACTURERS OF

DRY PRESSES, PULVERIZERS, MIXERS, ETC.

FOR
CLAY
AND
SHALE
BRICKS



FOR
CEMENT
AND
SAND-LIME
BRICKS

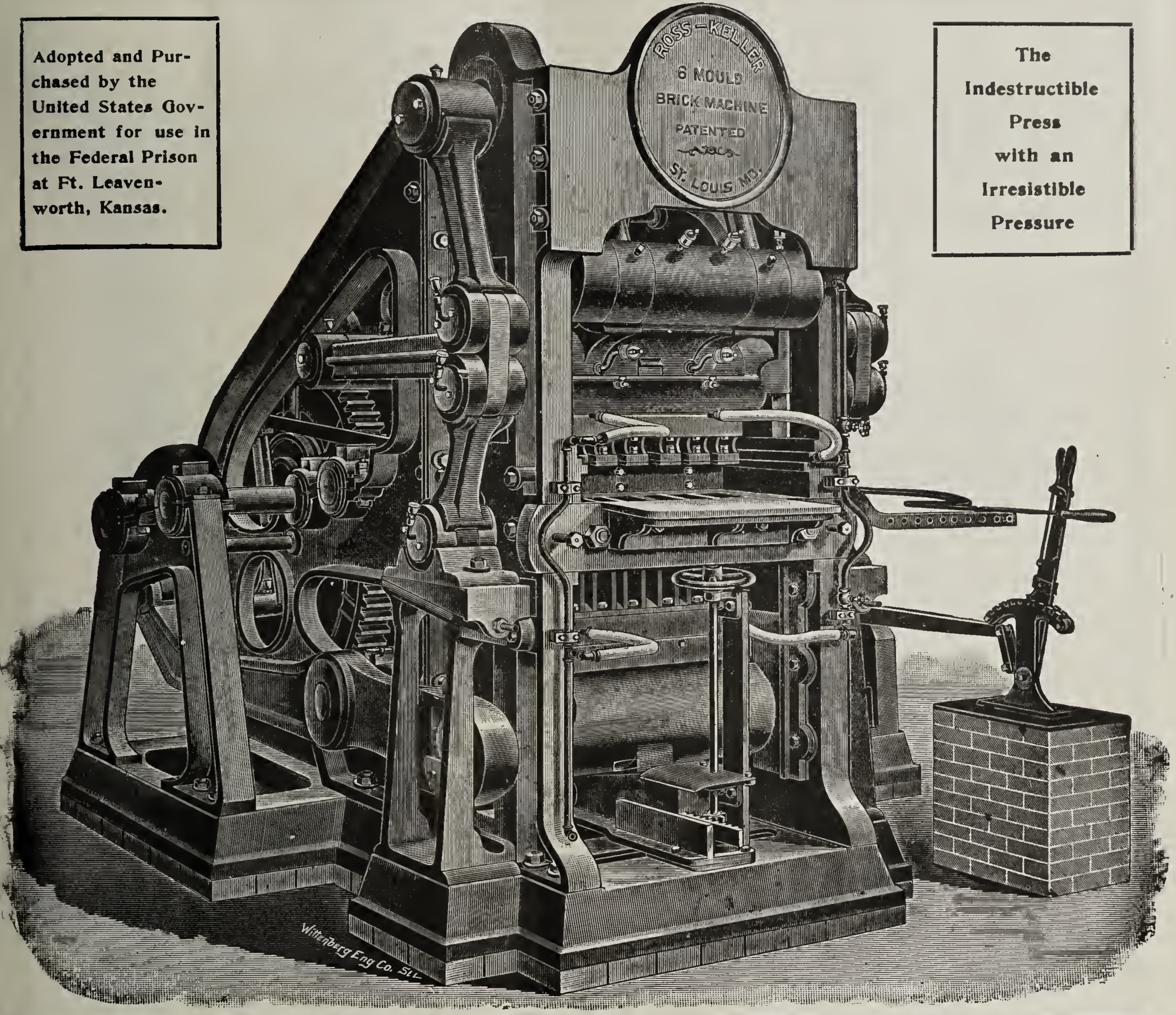
This Hand Press makes Brick equal in density to those made on a power press. Every Brick *PERFECT.* Extensively used for ornamental and special design.

The Fernholtz Brick Machinery Co.

BOYLE AND OLD MENCHESTER, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

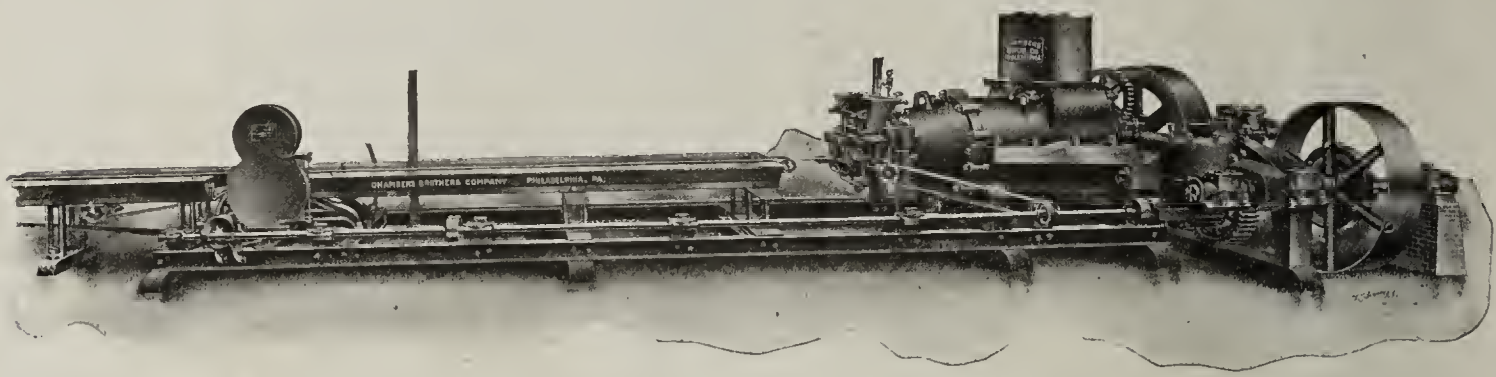
Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - - ST. LOUIS, MO.

Chambers Brick Machinery

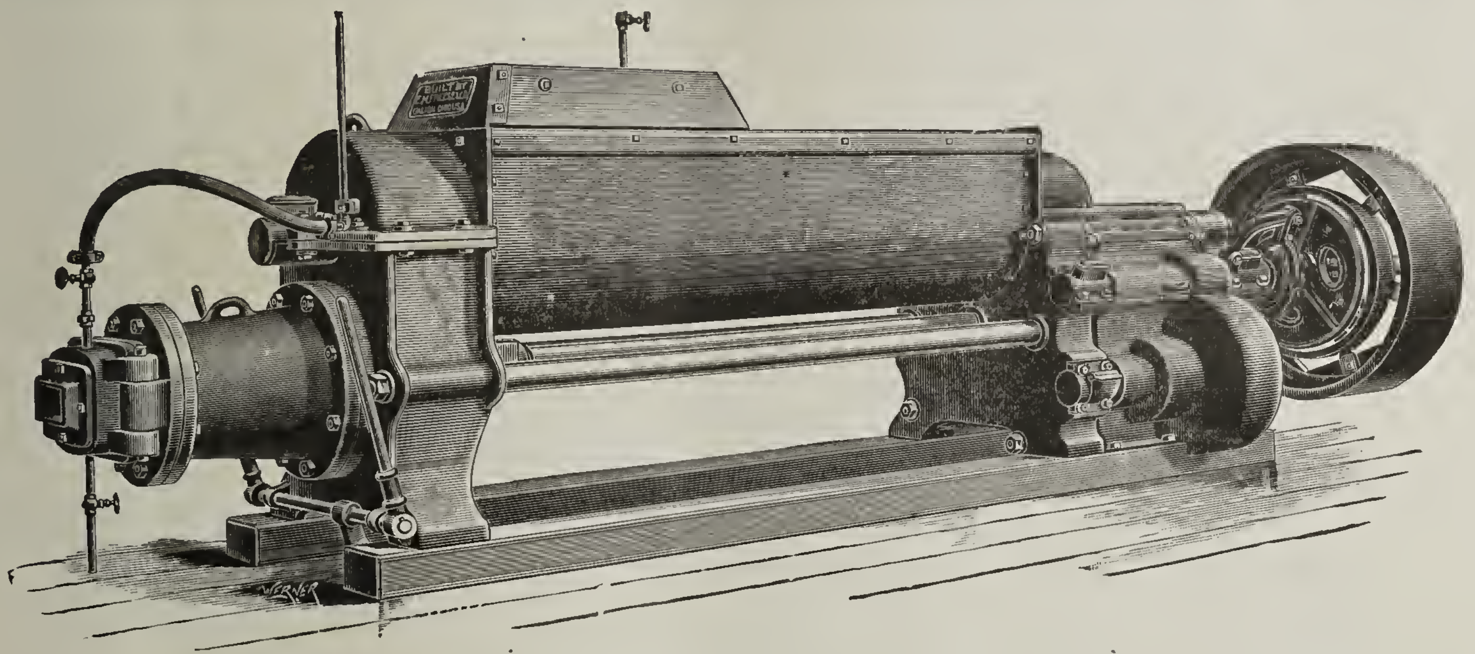


Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

Chambers Brothers Company

Philadelphia, Pa. Chicago, Ill.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

E. M. FREESE & CO.

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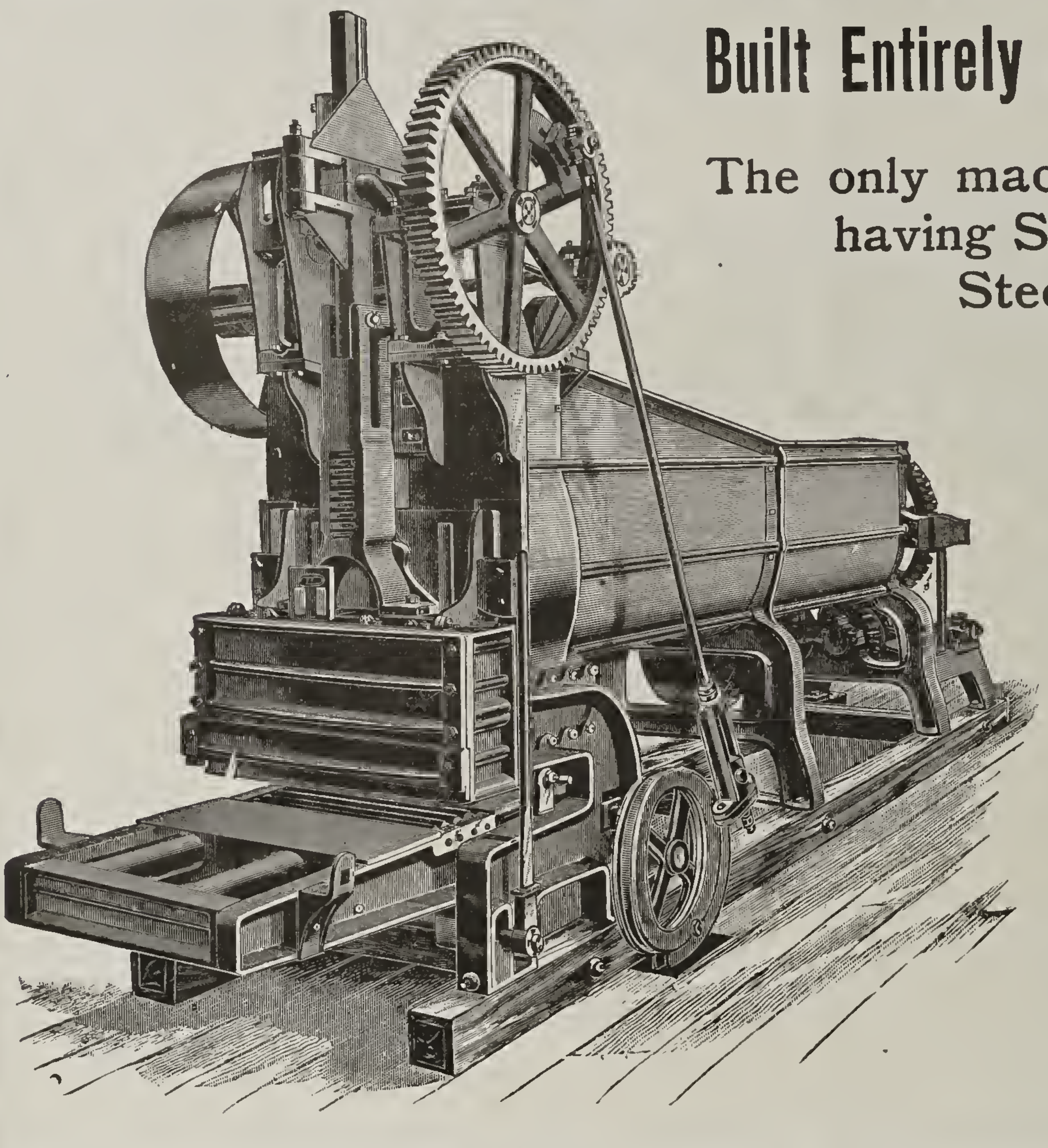
THE POTTS
HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

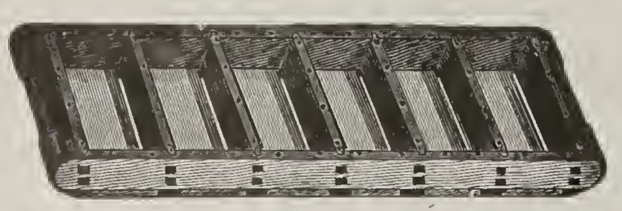
The only machine of this class
having Steel Gear and
Steel Shaft.

Built of the Best
Material by the Best
Workmen.

Simple, Strong and
Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

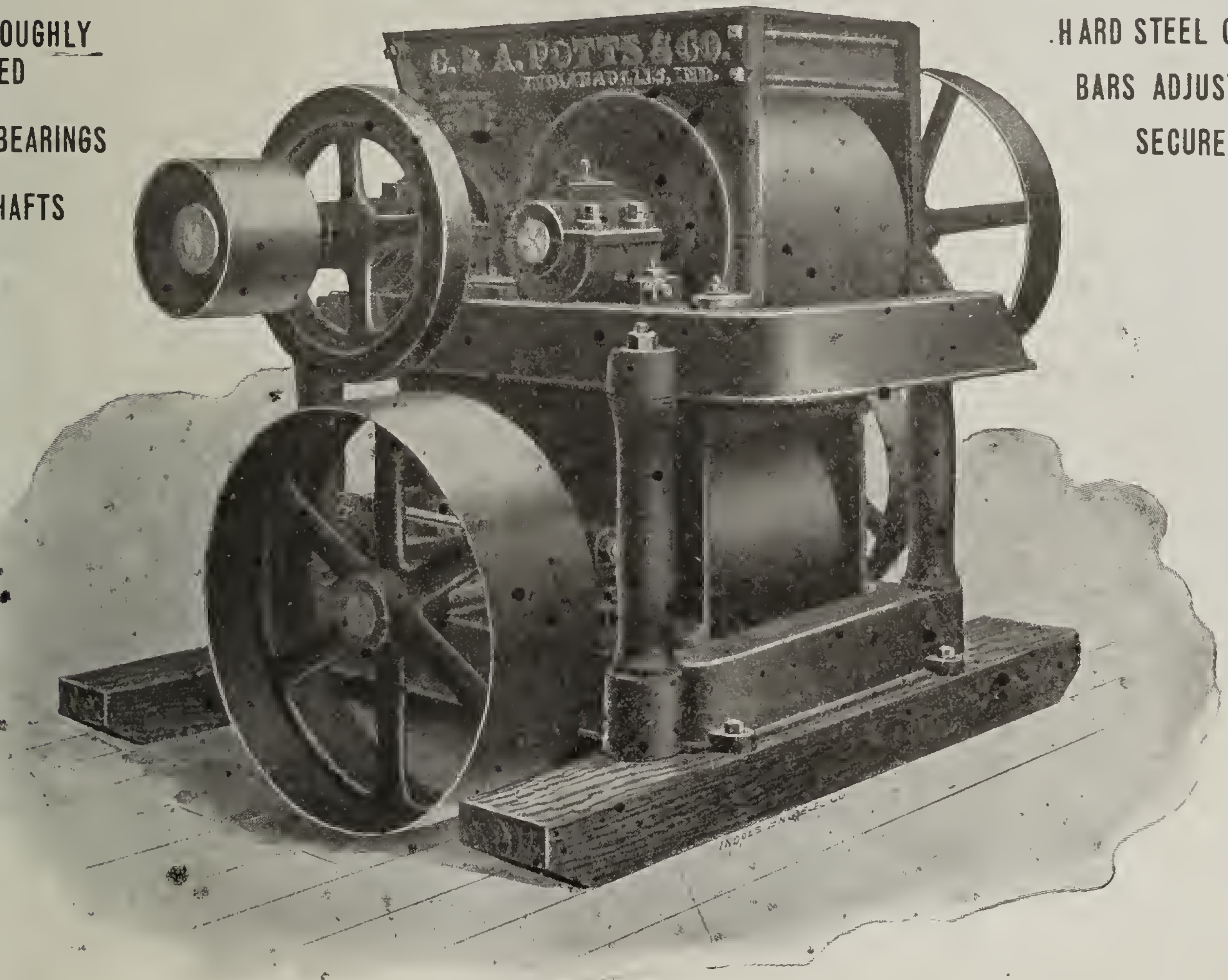
We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

Compound Disintegrators and Crushers

As Manufactured by Potts

Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.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INDIANAPOLIS, IND.

ROLLS, THOROUGHLY CHILLED

RING OILING BEARINGS

STEEL SHAFTS

HARD STEEL CUTTING BARS ADJUSTABLY SECURED

Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank. Will not choke or clog from hard, dry or wet, sticky clays. The MOST GENERALLY USED Machine on the market.

Built to Do the Work

Manufactured by

C. & A. POTTS & COMPANY
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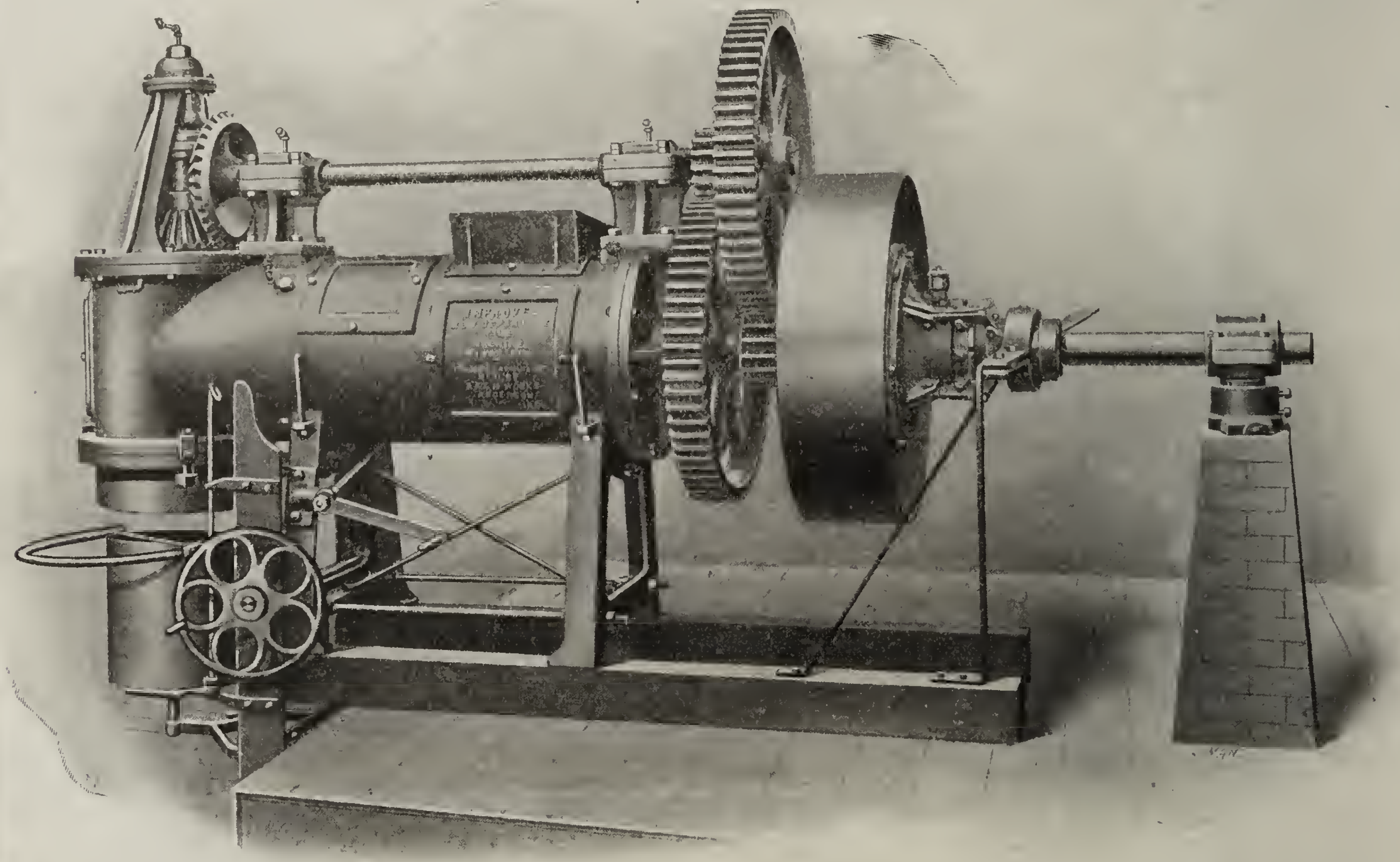
1908 NEW DEPARTURE

The Only Mill for Making Successfully Tile from 3-inch to 24-inch Diameter



Greatly improved in strength and convenience. Capacity increased forty to sixty per cent. Power required to operate forty per cent less than formerly

We also manufacture a complete line of high grade Dry Press Brick Machinery, Soft Mud Machinery, Dry Pans, Disintegrators, Crushing Rolls, Pug Mills, etc.

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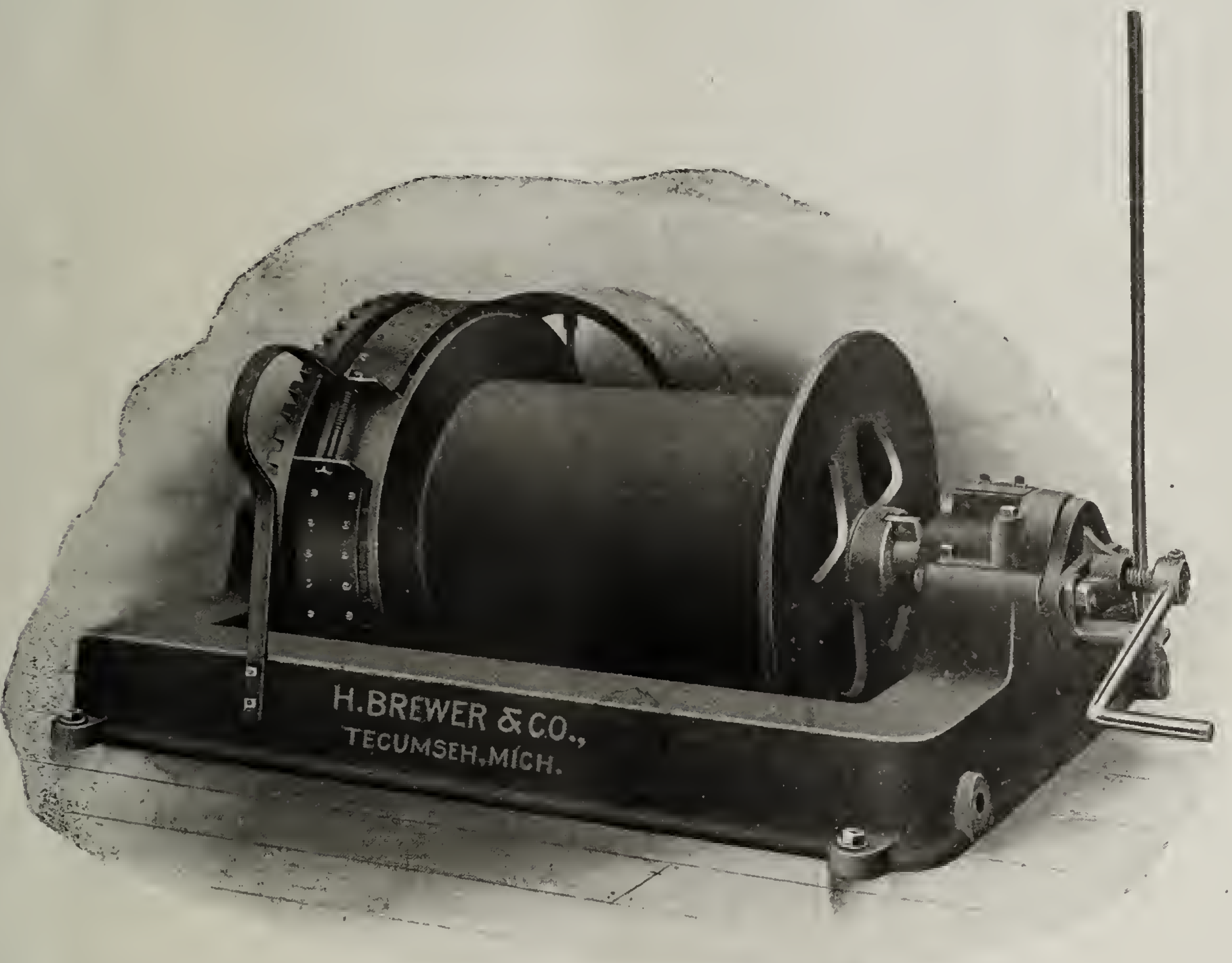
The
Anderson Foundry & Machine Works

Southwestern Office, Wilson Building, Dallas, Texas. ANDERSON, INDIANA

HOISTS

The Brewer line comprises all kinds of good Hoists, Light and Heavy Patterns; Large and Small Sizes; Spur and Bevel Geared Designs, A hoist exactly suitable to your work what ever it may be.



THE BREWER No. 28

is a large, heavy, bevel geared hoist of late design, suitable for the most severe requirements. The frame is cast in one piece. The drum, friction head and brake wheel are also cast together in one piece. The drum is 20 inches in diameter, 28 inches between flanges and the flanges are 30 inches in diameter. The bearings are self-oiling. The weight is 3000 pounds.
Get specifications of the other sizes and general catalog of clay working machines

If Marked BREWER It's Good

H. Brewer & Co.

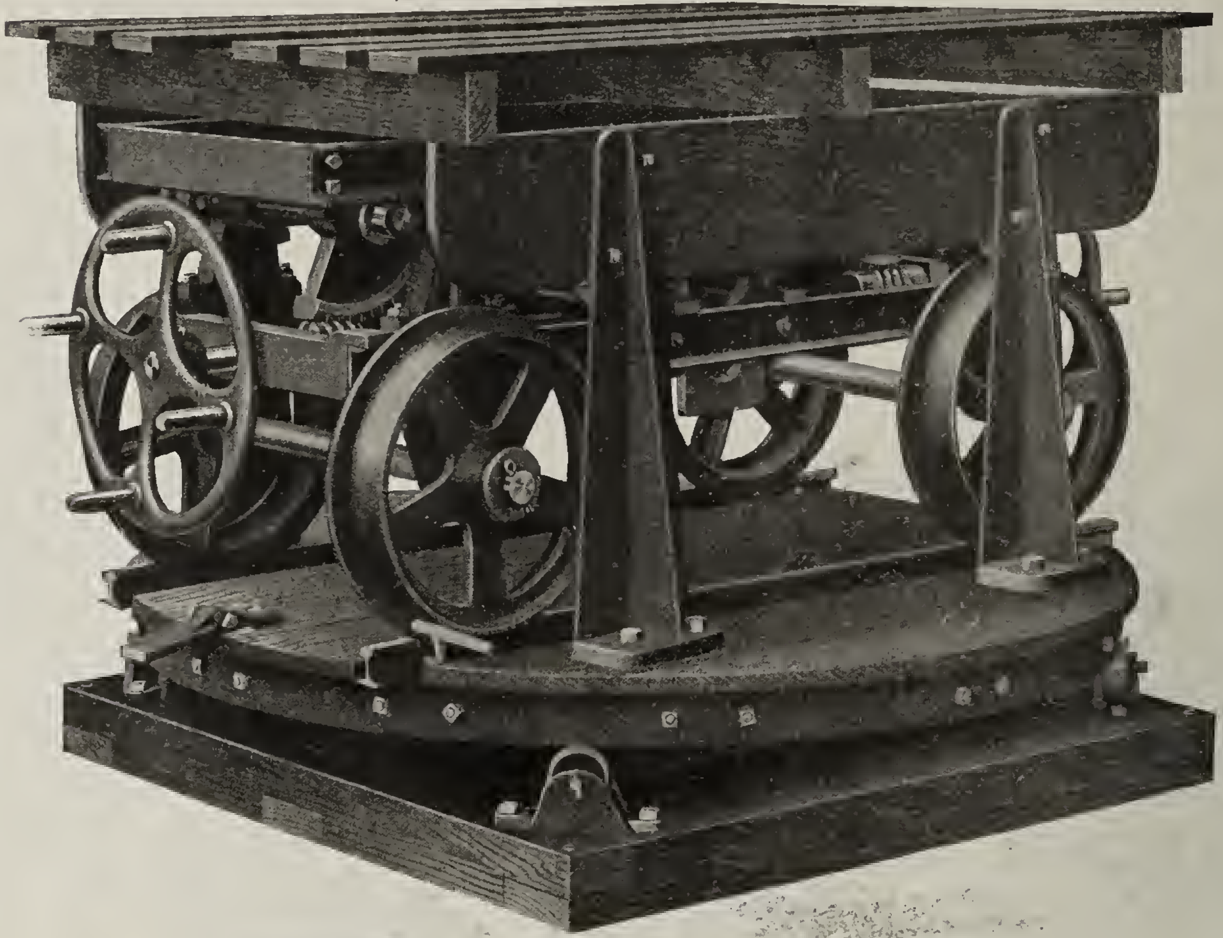
TECUMSEH, MICHIGAN

If Marked BREWER It's Good

THE GUILDER ELEVATING AND LOWERING BRICK CAR

And Turn Table Used with Same

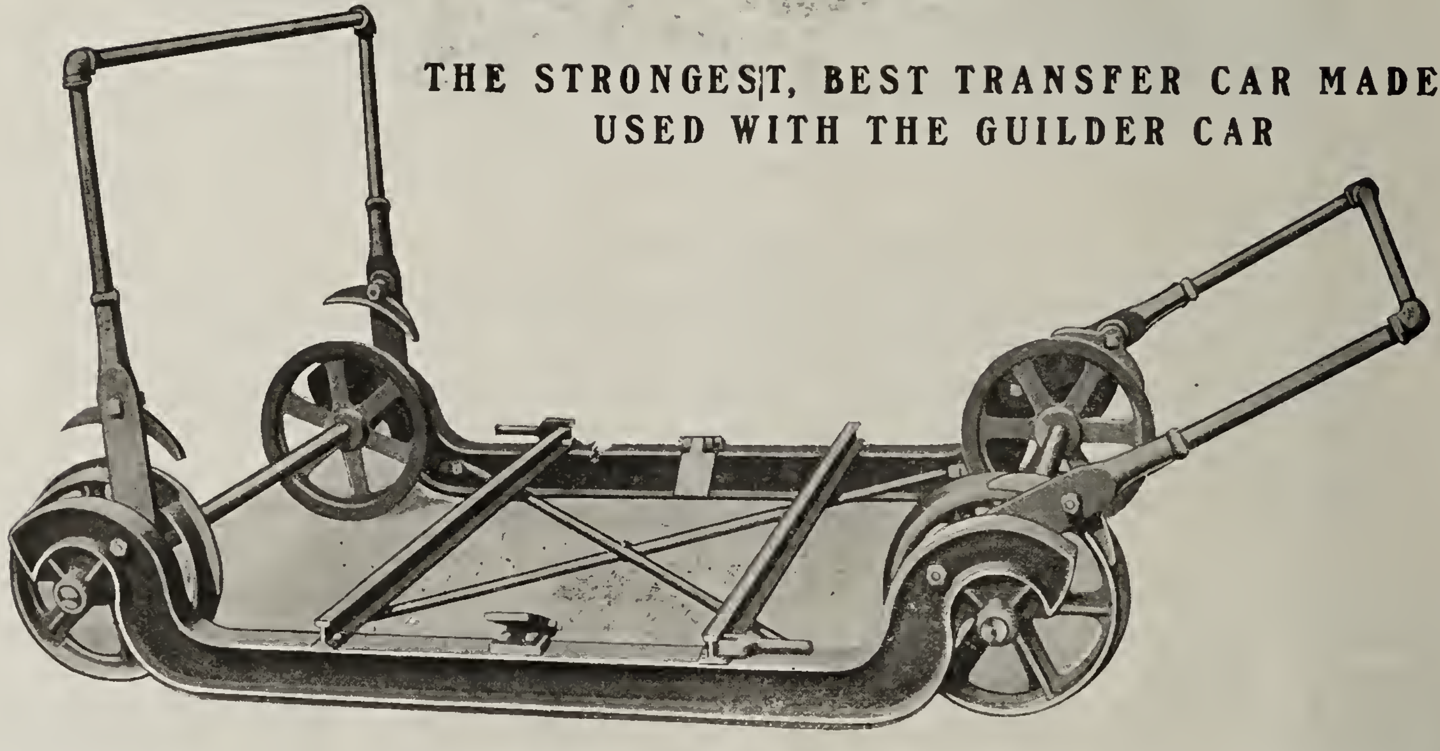
The most perfect car of the kind made. Easy to handle. Operated from either end. All iron and steel. Raised and lowered by Worm Gear and Segment.



No Charge for plans or for the right to use this system.

Pay only for what you get and nothing for a piece of "Blue Sky."

THE STRONGEST, BEST TRANSFER CAR MADE USED WITH THE GUILDER CAR



Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXIV. No. 4. CHICAGO, FEBRUARY 27, 1909. Semi-Monthly, $1.00 per Year Single Copies, - 10 Cents

ILLINOIS CLAY MANUFACTURERS' ASSOCIATION ANNUAL MEETING

THIRD SESSION

The third session of the Illinois Clay Manufacturers' Association was called to order at 2 o'clock, January 20th, in the Elks Hall at Champaign.

President Hammerschmidt:—The first on the program this afternoon is the paper, "The Cement Craze," by Charles W. Lansing, the editor of "Brick," at Chicago. This paper was to be given yesterday afternoon, but on account of not having the stereopticon set up yesterday, it was postponed until today so as to be presented at the same time as Mr. Wheat's paper.

THE CEMENT CRAZE: HOW IT TOUCHES THE CLAY MANUFACTURERS' POCKETBOOK

(Will appear in a later issue.)

President Hammerschmidt.—The next taken from the program is the "Life of Portland Cement Up-to-date," by G. G. & A. G. Wheat of Emmetsburg, Iowa. These gentlemen have given much time and thought to this subject. We are to be congratulated that we were able to secure such a paper. It will help us who manufacture drain tile to show up just what cement drain tile will do. They will show lantern slides and explain them as they go along.

LIFE OF PORTLAND CEMENT

Gentlemen of the Illinois Clay Manufacturer's Association:

This discussion begun one year ago, needs very little preface but a few words may not be out of place.

At that time we stated a few commonly known facts about concrete and explained them, then we drew the conclusion that cement concrete was unsafe material to use as drain tile. A great storm of protest followed.

Again in the September issue of "Brick" we presented some further observations upon the disastrous *results* of use of concrete as drain tile. These *results* shown were *good* proof of our first conclusion that concrete would decay in a drain tile. We now wish you to continue the study of the subject with us for a few moments.

Some of our critics have shown small caliber by being manifestly, and it would seem, purposely unfair. Have even criticised Prof. Orton for having any opinions on the nature of cement after his life time of study of cement and kindred subjects.

Now the whole discussion pro and con about the life of Portland Cement should be kept down to the essential facts, and the essential facts are these as before presented.

Concrete of Portland Cement does disintegrate and decay. This concrete is made by reputable manufacturers using standard brands of Portland Cement.

Concrete used for tile is showing the same weakness shown by concrete elsewhere only in a more marked degree.

Our study today will begin at once by continuing our former studies. This photograph No. 1 shows a piece of tile from ditch No. 2, Palo Alto County, Iowa. This was taken from the Ormsby Slough near Emmetsburg, Iowa. Notice the encrustation which has formed on the outside of the tile. This tile was very rotten and this photo No. 2 shows how it separates in the hands, the crumbs of concrete falling away, the pebbles no longer split through but the cement comes away from them.

About 40 rods or more of tile at this point decayed in a few months (about twenty, I believe) and were unfit to lay in the ditch. We studied the conditions surrounding these tile and decided that carbonic acid forming from the several inches of peat in the pond could and did hasten the decay of the tile and caused the formation of these encrustations. Water and organic acids had dissolved the cement out of the concrete. We will return to this soon.

Photograph No. 3 (which we are unable to produce) showed a crack in a sidewalk which has been healed like a crack in marble heals by the substance of the nearby stone dissolving and running into the crack, there crystallizing the crack full. This is another case of solvency for further study.

This photograph No. 4 is a piece of well cured cement tile which has lain a few months out on the tile yard. This piece was broken out of a strong good tile, see the white split pebble in the largest piece of the broken tile, the pebbles split at that time. This piece was subject to the action of water percolating through it for 350 hours and a total of 12.24% was dissolved out of the concrete. It is our belief that nearly all the soluable elements secured come from the cement.

The five little vials show the amount of material secured from the piece of tile. This is another unquestionable case where water has dissolved out the Portland Cement.

Chemical analysis of these soluble elements we give at once and they are very interesting.

The encrustations of No. 1 are:

Silica	3.16
Alumina and Iron	2.00
Calcium (lime) Carbonate	90.00
Magnesium Carbonate	

The materials from the healed crack in the sidewalk are:

$Si O_2$	16.17
Al and Fe	.17
Lime Carbonate	78.20
Mg O	.67

SOXHLET EXTRACTION.

$Si O_2$	21.1
Fe and Al	.9
Mg O	.7
Lime Carbonate	75.8

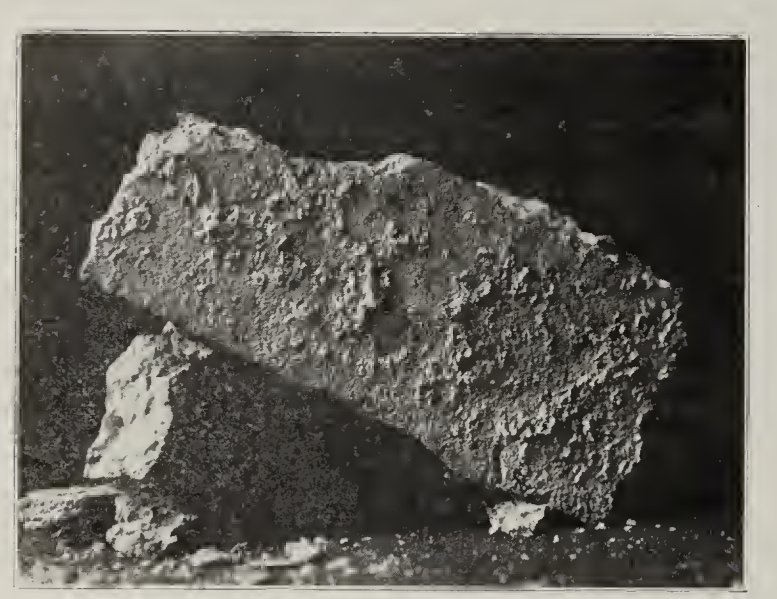


Figure 1

These analyses are virtually the same except in the amount of Silica, this varies because it is not the soluble element, rather it gets trapped into the other materials as they form, and the amount of silica or fine sand that we find in these cases is controlled by the conditions which existed while the encrustations were forming.

Now since the analysis of what we *know* we dissolved out of the concrete corresponds with the other we are justified in saying that the encrustations could come from the concrete wall on which they formed, by being dissolved out by the water. In the case of the sidewalk material it is very evident that it is derived by dissolving out of the walk and forming in the crack, and in the case of the tile it looks not only possible but highly probable that the encrustations was derived from and is a part of the original tile. This seems true also because the original tile has become so rotten, and it certainly has lost much of its original strength, and can be crumbled in the hands. And again we have dissolved out of pieces of tile just the same substance.

When it is so unmistakably true that water will dissolve Portland Cement in this manner, this settles the question at once that cement tile will not endure but will decay and are altogether unsatisfactory.

Now Messrs. Larned and Sherman have tried to show that Portland Cement was not soluble more than a very few per cent and that the limit of solubility was reached after about thirty-five days of soaking. These gentlemen entirely failed to grasp the real problem. They used a brickette which they made up and cured in the laboratory and then tested it. They completely overlooked the fact that concrete which does decay does so under entirely different conditions. These examples we now use are cases which are subject to the natural weathering conditions and to the water and acids of nature. All Messrs. Larned and Sherman's work is of absolutely no value in the study of the cement tile problem.

Need we stop here to state that we have been our own most severe critics and that we welcome any helpful criticism. Mr. Layton Gouldin, assistant to Dr. Knight, who did the work of extracting the cement from the piece of tile, has questioned the reliability of his own work done on a concrete tile as being open to the suspicion that contamination might result from the sand and gravel which forms from two-thirds to four-fifths of the body of the concrete. He therefore made test upon various samples of cement which had no sand or gravel. The results show clearly that the Portland Cement is by far the more soluble part of the concrete and that we are justified in believing that the elements of the sand and gravel are practically insoluble as compared to the Portland Cement.

One other point in the study of solubility of the cement in a drain tile is worthy of attention. Some critics endeavor to argue and some endeavor to show by tests that the amount of cement which will dissolve grows smaller each succeeding time, thus trying to show that it will eventually cease.

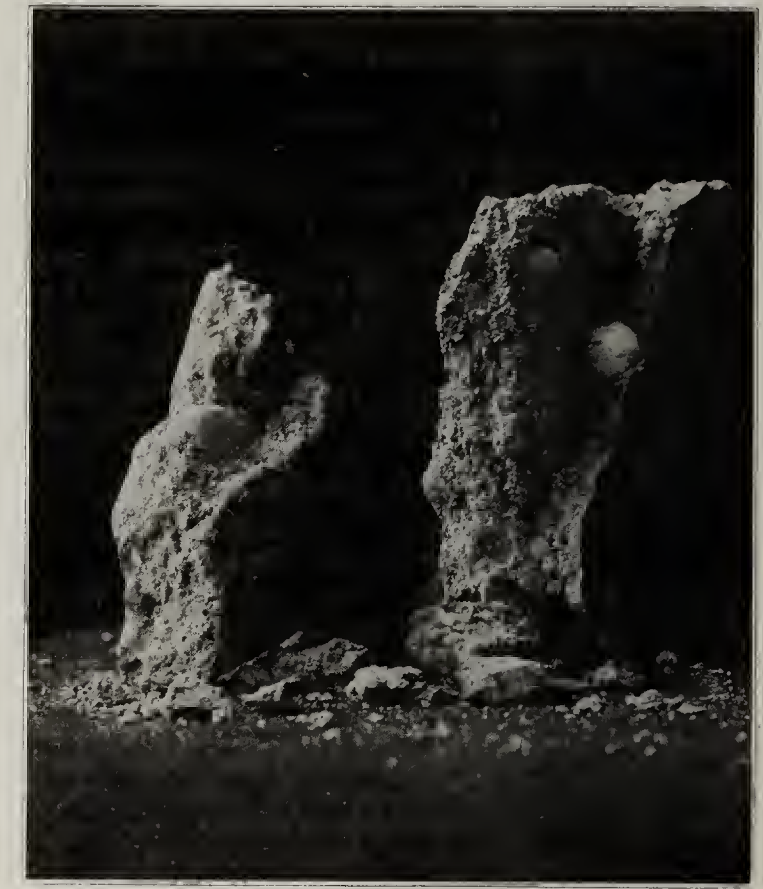


Figure 2

The records of this case show that

First period of 70 hours yielded	2.34 per cent
Second period of 70 hours yielded	2.55 per cent
Third period of 70 hours yielded	2.41 per cent
Fourth period of 70 hours yielded	3.04 per cent
Fifth period of 70 hours yielded	1.90 per cent

This shows that the rate is continuing about the same, even increasing a little but even if it stopped short now and not a bit more would dissolve it has already dissolved out 12.24 per cent of the whole piece of tile. This coming largely from the cement means that a large part of all the cement has been removed and this is further proved by the fact that the tile is crumbling badly and would not stand much strain.

When this piece of tile was removed from the extractor, and gently laid in the palm of the chemist's hand, he desiring to dry it, it broke of its own weight into the several pieces which you see in this photograph. This piece of tile upon drying became harder again. This is the way that Calcium Carbonates behave when they are porous and have been thoroughly soaked in water for a considerable time. The significance of this to the user or maker of cement drain tile is this: A tile which might stand up under a severe strain when entirely dry would break down much more readily when thoroughly soaked in water. This would be even more emphatically true, if the water contained a considerable amount of carbonic acid. This, which we have just stated, is true concerning the tile in which the sement bond has deteriorated to a calcium or lime carbonate.

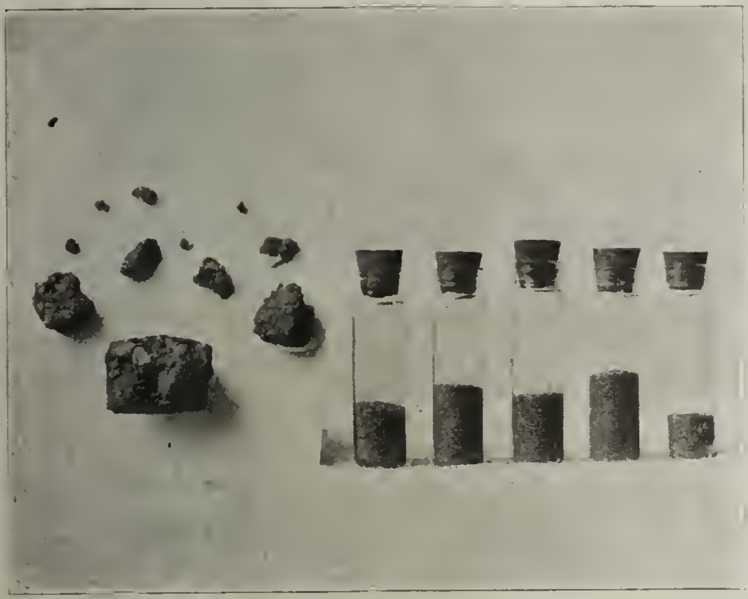


Figure 4

Now one year ago we stated that the explanation of why concrete decayed in the cases which we showed was because the cement was soluble in water. This explanation is and was correct. But we were not at all satisfied at that time as to just what process or change the lime silicate and the mixture of lime Aluminum and Iron went through in order to pass into the solution in the water.

Let us now examine this process. Observe that the lime is all a carbonate and the magnesia when found is also a carbonate. A carbonate is formed by a combination of carbonic acid with the lime. Now if the lime silicate of the cement can change to a lime carbonate and free silica or sand under the action of corbnic acid, this is a very interesting explanation.

Let us see if this is the correct explanation of what has taken place in the cases we have been studying, and we will call in the men who have criticised Prof. Orton and us to help us to decide.

Mr. Spencer B. Newberry states: "As to the action of carbonic acid and other acids derived from decay of organic matter in the soil, it is well known that *dense impermeable concrete* effectively resists weak acid for a very long time." This implies that carbonic acid does have an effect on the concrete.

Mr. Richard K. Meade says: "It is probable that in some localities there are substances in the soil which would attack the concrete if the latter were made very porous."

Messrs. Larned and Sherman discuss the process of how water containing carbonic acid carries carbonate of lime inward into concrete and closes the pores.

We agree with all these gentlemen and freely admit that dense impermeable concrete will effectively resist weak acid for a long time. Also that in large masses of concrete water may carry the soluble lime carbonate into the minute pores and close them.

They in turn will undoubtedly agree with us that cement tile are not dense impermeable concrete. They will further agree that with the water passing through the porous tile or across the face of rough porous concrete, the conditions are right for the weak carbonic acid to have access to the cement, and to form carbonated lime, also when and where carbonate of lime has been formed, it can and will be dissolved, and it will have no chance to close the pores in the thin walled porous tile, but will be carried away in the solution.

The whole question depends on the nature of Portland Cement, and the nature of Portland Cement depends on the nature of lime, its chief constituent. Carbonic acid does have a very definite and steady power over lime or calcium in practically every combination in which calcium is found. There are a few compounds like gypsum in which the lime is strongly held by a powerful acid, but silicic acid is not a strong, powerful and active acid.

As long ago as 1854 French chemists and engineers wrote like this concerning the lime cements: "The affinity of carbonic acid is sufficiently powerful in the presence of water to separate its full equivalent of lime from combination with the other ingredients of these silicates leaving the said ingredients, whether combined or not, simply mechanically mixed."

Carbonis acid does prove its power in nature by the fact before alluded to, that practically all the lime of the earth to which we have access, is now a lime carbonate or common lime stone, the few exceptions being gypsum and the phosphates. Of course, a gerat amount of lime is still combined in the granite and granitoid rocks. This lime is one of the chief causes in the decay of these rocks.

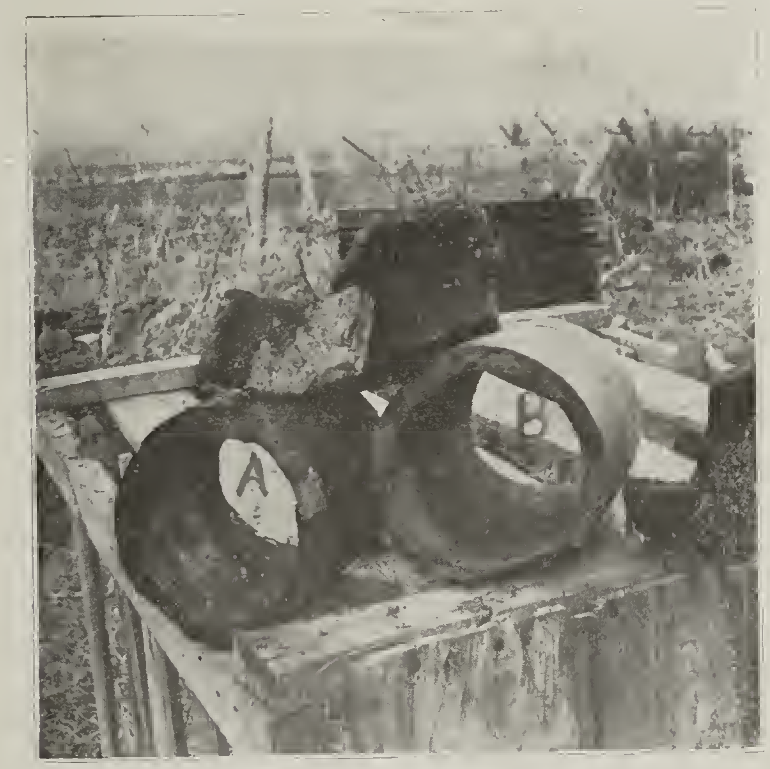


Figure 5

The dissolving of the alkalis and of lime out from the feldspar in the grainte rocks leaves behind the silica and the clay material, these being the practically insoluble elements of the granite. Nature in many places has formed new rocks by combining these elements of silica and the clays into new rocks by heat and pressure in the probable presence of superheated steam. These new rocks are the most durable rocks known, Sioux Falls granite being a good exampleof this kind of rock. And when man takes these same elements silica and the clays and combines them in a similar manner and fuses them by over two thousand degrees of heat in the fires, he can produce a material which will endure all that Sioux Falls granite (quartzite) will endure with this additional advantage, this man made product will withstand fire. There are many tile in Illinois and Iowa made in this manner whil will outwear Sioux Falls granite.

The substance of all we need to say further on this point now is simply this: Carbonic acid does unite with the lime of Portland Cement. Our tests show that it has united with so large percentage of the lime in the cement tile that when all of the lime carbonate is dissolved out together with all the other soluble lime and soluble elements of the Portland Cement, that there was not sufficient strength left in the tile to stand, and it broke down easily without any force being applied.

It will be useless for any critic to say we are offering any different explanation than last year. We have simply continued and made it more complete, and explained in this particular case the lime became soluble and was removed by the surrounding waters.

Now, the importance of this fact of the lime changing to a carbonate under these conditions, becomes more clear when we learn what carbonic acid is and how it occurs. Carbonic acid is one of the simplest and most frequently found acids of nature. It forms by a combination of one atom of carbon and two atoms of oxygen, uniting with water. These atoms of carbon and oxygen commonly called carbon dioxide form wherever any vegetable matter decays, or where gases formed by the break down of any organic matters escape into the air. Carbonic acid is thus very prevalent in all rich soils, especially in black humus and peaty soils, it is found in all rain water and snow water. The reason why these tile just examined decayed so rapidly was from the large amount of carbonic acid which forms from the rich soil and peat from this slough.

Let me pause long enough to say that Carbonic acid is by no means the only substance which may attack and destroy the integrity of the Portland Cement. This bulletin No. 69 of the Montana Agricultural College Experiment Station, at Bozeman Montana, explains some serious failures of cement sewers and even massive foundations of building, these failures being found to be due to the alkalis of the soil and ground waters. These alkalis are prevalent in many other sections especially so in parts of the Dakotas, also found in very noticeable amounts in sections of Minnesota and Iowa. The importance of this should not be overloooked. However, we are limiting ourselves to-day to a study of the action of carbonic acid.

What drainage interests demand and will have is the satisfactory assurance of the durability of materials in the manufacture of drain tile used in drainage; this guaranty they expect the manufacturer to furnish. It must be admitted that many of those in charge of drainage are not doing their duty by demanding and securing any guaranty, especially is this true of those who are in charge of public drainage.

We ask formally to-day a question of great public interest. If a tile drain fails after a few years use what recourse has the taxpayer, what can be done about it under the law. The manufacturers of cement tile have not been able to furnish any satisfactory assurance of the durability of the tile. The committee on Technical Research have not been able to furnish any scientific assurance that cement could withstand the weathering agencies, and investigation of the places where cement tile were used in years past furnishes no practical assurance of the lasting qualities. On the contrary, evidence is arising constantly that cement tile are all that we have explained them to be; unsafe, unsatisfactory and unreliable. A few instances that we will now present are not offered as proof of our arguments but they will assist the reader whose time is limited to see the results of cement tile use.

Our attention was called to a long ago failure of some tile at Rochelle, Illinois. The particulars are substantially these; the tile were laid on David Huston's farm, five and one-half miles west of Rochelle, Illinois, about 320 rods were laid some cement and some clay tile. When clay tile were not procurable cement tile were laid, the system was thus mixed tile. The ditch did satisfactory work for about two or three years. The cement tile were removed at the end of about five or six years; not one cement tile was relaid. When dug up the cement tile would be found crushed flat for a distance, then a few might be standing but on taking hold of them they would crush and crumble in the hand. Almost the entire 320 rods was dug up, all the cement tile were removed. These tile were laid about 15 or 16 years prior to 1908 and were removed about ten years ago. The son who gave me the facts just stated above remarked, "Why I'd rather have an open ditch filled with nigger heads (boulders) than a cement tile ditch for the stones would let the water run around through."

Anxious not to deceive ourselves at any point in this matter the maker of the tile was sought out at Ashton, Illinois. He was deceased but finally the man who superintended the manufacture of the tile was found. The tile were made with excellent *clean* sand and a fair proportion of best Portland Cement. It is an acknowledged fact among all users of cement that a good aggregate with the voids fiilled with cement, even though the per cent of cement is small, is better than a coarse open aggregate with but partly filled voids though the per cent cannot be much greater. The reasons are most obvious; the cement gets a chance to bind the particles together, the amount of cement used cannot be definitely known though it was planned to use one to six.

Any cement tile maker knows that it is difficult to get a tile to stand up during manufacture when clean sand is used and to endure carrying away from the machine with too small a per cent of cement, and also that clay in the sands makes it possible to use less cement and get the tile to stand up in manufacture.

Now as the superintendent tells me that the tile stood up *well* during manufacture and the sand was very clean, a fair amount of cement was used we present herewith several photos. The photo No. 5 shows one of the tile of this Ashton, Illinois, plant which has escaped entire destruction. The ends of two tile are shown. The tile on left marked A is a cement tile, the wall is close and dense and well packed, the voids well filled and is much better body than the great majority of the machine made cement tile now being used in Iowa.

The tile marked B is a clay tile found among the refuse of the same 16 year old ditch. Photo No. 6 also shows pieces lying on top of the tile. The pieces showed close, dense structure. The tile marked A shows how the wearing has left the pebbles projecting very noticeably, the whole surface of this tile was crumbly but seemed still solid in the case. Photo No. 7 shows the inside of the two tile, the cement A and the clay B. The clay tile was in every respect perfect and the cement tile as described very much disintegrated.

We have no way of knowing that these tile were ever in the ditch but it is very plain that they have endured the same conditions of weathering; the clay endured well, the cement rotted steadily.

At the same town an ex-road commissioner was interviewed and his experience in removing the concrete tile culverts tallys perfectly with the foregoing, the tile appeared to dissolve where the water got to them.

An ex-supervisor of Palo Alto county tells me of his nephew, an ex-road supervisor in Southern Wisconsin, who visiting him in Palo Alto county, Iowa, saw some of the cement tile lying beside ditch No. 2 when they were first placed there. The nephew inquired, "What do they intend to do with those cement tile?" His uncle replied, "Make a county drain." The nephew said, "Well they'll lose out on that." Then he told of his own experience with concrete tile road culverts in Southern Wisconsin and how they all crumbled and decayed. It is singular that some of the tile in that very ditch should have decayed so badly before they ever got into the ground. These cases we know about and have examined and verified. Many other instances have been reported from Illinois and elsewhere but not having been verified by personal examination will not be mentioned at all.

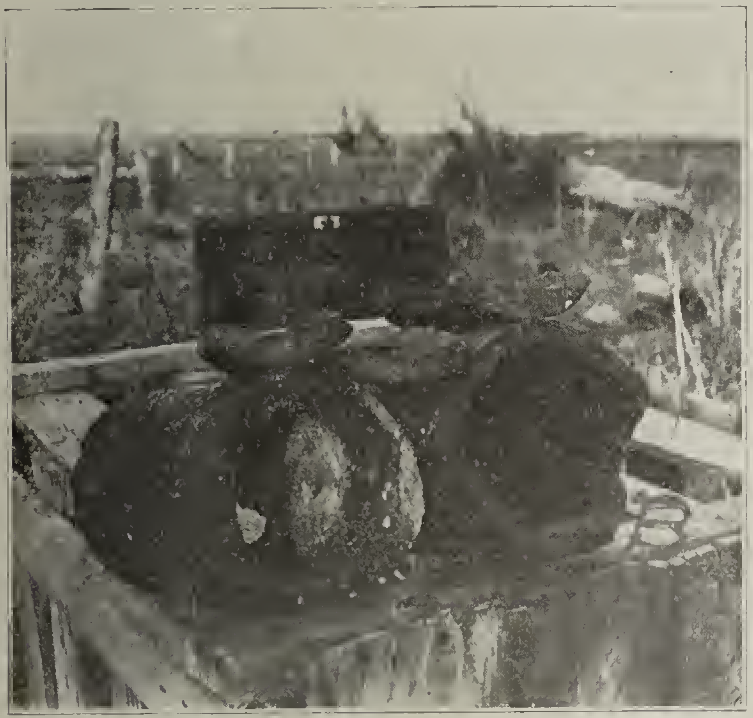


Figure 6

As a further word in proof of our statements that Portland Cement is not a constant, that when perfectly set is not a state of rest, we may mention that in many cases already observed by tilers and land owners known to the writer, cement tile have been found to "grow together" at the ends and form one continuous pipe, tile laid in sections becoming one long pipe. Now nothing but the moving of the cement has caused this.

Another singular and very noteworthy recent development is observed near Lake City, Iowa. The formation of encrustations has begun in the bottom of a large 20 inch main, and in connection with this we would present a photo No. 8 of the inside of some water mains of California, where city or irrigation water supplies are sometimes conducted through cement pipe.

The question has been asked by some of the cement tile advocates why these mains used for 18 or 20 years in the west have not decayed if water has the power to cause decay. The reason is this: the waters collected in great reservoirs and from a vast watershed pass over a great deal of soluble matter and soluble lime is present almost everywhere. A great deal of evaporation takes place from these reservoirs and the water in the reservoir soon has its full load of soluble matter and can no longer take up lime. This is clearly shown by the fact that when this water is in motion, running through the pipes, the load is partly precipitated out of solution. Carbonic acid is everywhere present in some degree and is plentiful in rain and snow waters. This enables the water to carry a heavy load. Carbonic acid is easily released from water in motion, for example: stir a glass of soda water (carbonic acid) and watch the bubbles escape. When the carbnoic acid escapes the lime which it held in solution precipitates whether the water be in motion or still. Furthermore, these encrustations of pipe in California may be other materials mixed with the lime carbonates. We haven't examined them.

Examine this photo No. 8 and ask yourself the question, can we afford to use a tile which will lose a large part of its carrying capacity in a few years. The tile at Lake City two years in the ground has fully one-ninth as much encrustation as that shown in the photo No. 8 from California. The examination of the encrustation shows that it is a very considerable part fine grit and silt which is cemented together by lime carbonate into a mass not rock like but altogether too hard and cement like for any worm or chain sewer pipe cleaner to remove it.

Someone of the opposition may rise with the humorous question, "why how can the water dissolve the tile and water, also deposit the same kind of material on the same kind of tile?" This is quite possible, the conditions varying at the two different places. An Indian ate at the table with a white man. The latter blew his breath on his hot soup. "For why white man blow on soup?" "To make it cold," was the reply. Later the white man blew on his ice cream. "For why white man blow on pudding?" "To make it hot," was the reply. "Ugh," said the brave as he jumped up from the table, "Injun no eat with man blow hot and cold with same breath."

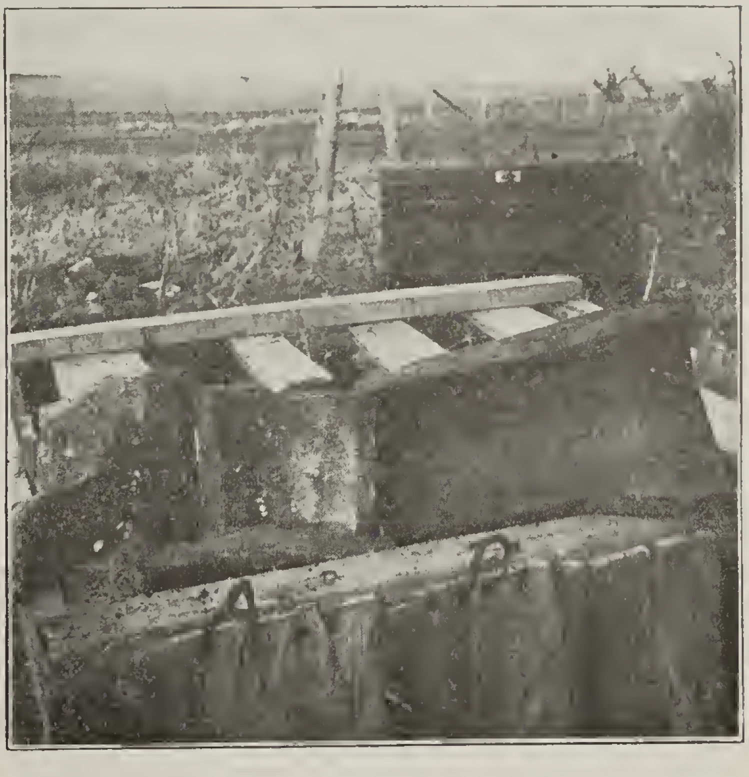


Figure 7

We present only one main proposition—cement when set is not at a state of rest, it is not a constant; the concrete is not absolutely permanent. The cement will move under conditions which allow access of water and the organic acids.

Let us add one more. No critic has any right to take any statements we have made and try to twist them into a general condemnation of the use of concrete. We have before this mentioned large fields of usefulness for Portland Cement but the use of Portland Cement Concrete as a material of drain tile is altogether unsafe, unreliable and will prove utterly unsatisfactory.

We are hesitant about printing the letter below because of the ungentlemanly, unwarrantedly and unkind attacks which were made upon Prof. Orton but the writer of this letter assured me that he would stand for any use we saw fit to make of the letter, except that it should not be used as the basis of a rabid attack upon cement in general. Prof. Bleininger wrote this statement March 22nd, 1908. Soon after this he entered the employ of the United States Government as Ceramic Chemist of the United States Geological survey.

THE UNIVERSITY OF ILLINOIS.
March 22nd, 1908.

I consider the use of Portland Cement drain tile advisable only when they are made practically impermeable so that no flow of water takes place through the pores of the walls. This is necessary since any flow of water especially of water charged with organic acids will tend to leach the cementing material, thus gradually weakening the structure.

It is my candid opinion that Messrs. Wheat are pursuing their investigation in an impartial spirit ,and are endeavoring to arrive at the real facts of the case.

(Signed) A. V. BLEININGER.

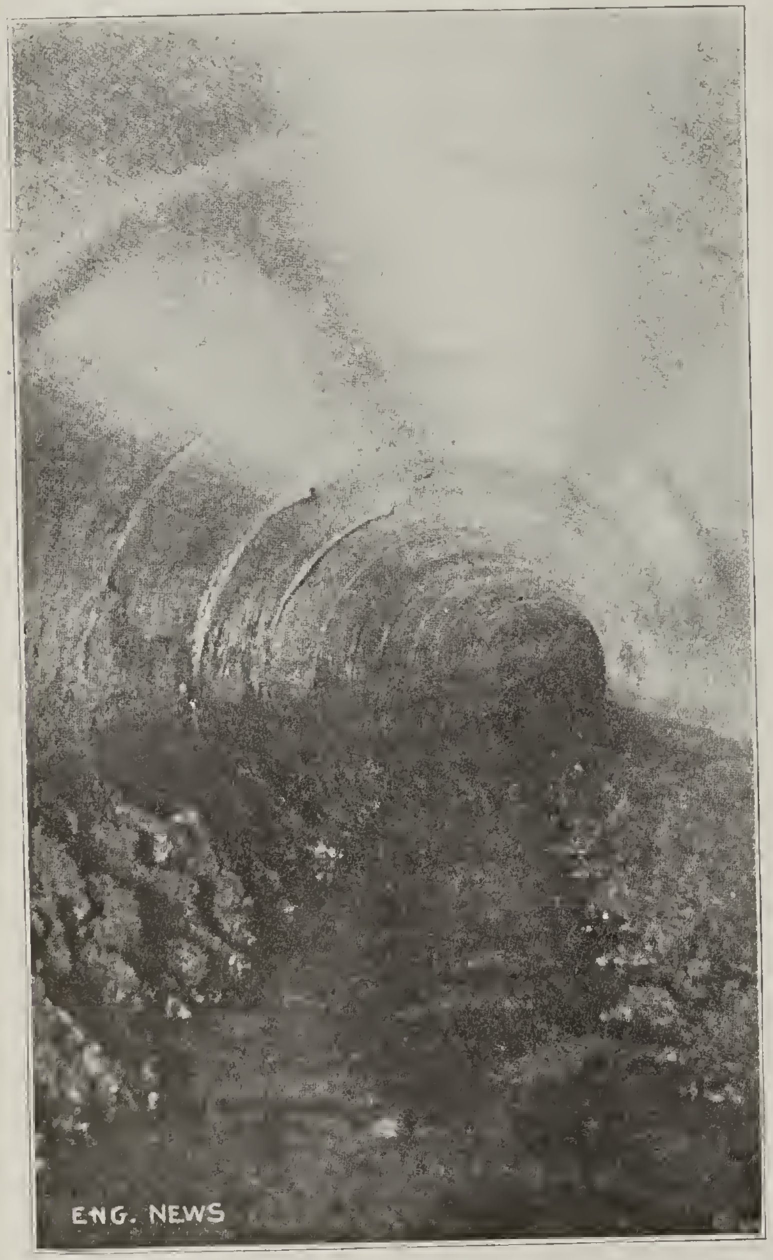


Figure 8

The President: Gentlemen, we have listened to these two very interesting papers. Does any one wish to ask any questions of either Mr. Lansing or Mr. Wheat?

Mr. Robb: The Paving Brick men have a snap at the present time for our not interfering with them. About sixteen years ago they built streets of cement in one town that I know; they have built them in a limited way in Gary, Indiana, and there are two or three towns I know where they have built them, the cement taking the place of paving brick. I may say that we are organized somewhat to offset this fact and are spending a lot of money on this subject and we are not spending all our time cutting coupons and declaring dividends.

Dr. Converse: Mr. President, you remember that old remark, "You can fool some of the people part of the time, and all of the people some of the time, but you cannot fool all the people all of the time." Now, the people are beginning to find that out. I believe in the survival of the fittest, and while this thing may hurt a little bit at times, they are very soon going to learn that all that has been said in regard to the use of cement in improper ways is true. They are finding out very rapidly and intelligently in regard to drain tiles, they are finding it out in regard to fence posts. but, as the papers said, there are some things that cement is so well adapted for that it looks to me that it has come to stay and ought to stay. Let us put it where it belongs. But these diversified uses, where it is being demonstrated that it is out of place, are going to satisfy the people that they have little use for it. I had a rather amusing experience not a great while ago in Ireland. I saw some American ladies looking for some shamrocks. They had an old Irishman down looking for stubbles. I said to the young ladies, "What are you looking for?" They said, "Shamrocks." I said, "I saw a fine bed of shamrock and I will show it to you." And I took them to an old cement walk that was going to pieces and I said, "There is about as fine a piece of sham-rock as I ever saw." They saw the joke and appreciated it. (Laughter).

I am not very much afraid of these things. Probably I am a little too optimistic. We are afraid sometimes that the brick are going to get out of date simply because there is a good deal of rush and furor at this time on account of the advertising of cement. You must remember that it is new thing and all new things have their run. But as I said before, the survival of the fittest is bound to be the rule. I do not think that you need have very great anxiety. These things will seek their level and we will keep on manufacturing brick, for brick has always been manufactured. They have found nothing that was more durable or better adapted for use. I agree with the suggestion thrown out by Mr. Wheat at the close that "we ought to talk more about our business and we ought to put it before the public in better shape." The cement people are spending a great deal of money. We ought to do something of that kind. But do not let us worry. The "survival of the fittest" is the law that governs. (Applause.)

Mr. Walter: I want to say, gentlemen, that there is one trouble in some towns that we come in contact with. That is illustrated by a trouble in my town. We have two masons there that both have concrete block machines, and if there are any cellar walls to go in under foundations, they will talk for the concrete in place of the brick. Consequently, I don't know how to fight those fellows, unless I get a brickmason in from somewhere else to put up brick; but I cannot do that very well, because I don't know whether it will stand one or two more men in our town laying brick. I will guarantee that I can put in a brick wall of the same thickness as cheap as they can with cement foundations, but then I have the masons in my way. They make their own concrete. They put it in there and sell it.

As Dr. Converse said, all new things are taken up by the American people. Just like the craze of the ladies for wearing the "Merry Widow" hats. The new craze had its run. The people are going to have cement until they find out that it is no good.

Mr. Lauer: As a member of this convention I have taken a whack at the concrete block proposition for a good many years. I have often taken a shot at our friend, brother Hammerschmidt, who was buncoed into buying a block machine. (Laughter). There is no question, but what we are all agreed that concrete construction is making, has made, and will make inroads upon the business of the clay manufacturer. There is question about that. I believe it would be profitable to conduct a campaign of education. It is not only a wise thing to take up, but I think it will be a very necessary thing.

Some years ago I was engaged exclusively in marketing hollow building blocks. At that time there were five or six manufacturers of hollow building blocks in one town. About that time the cement blocks came in. Not very heavy at first, but enough so to know that they were here. And then the next year they came in a good deal faster. In towns where I had been in the habit of selling ten car loads, we would sell four, and then only one, and on investigation I found that there were three men there with block machines all doing business. That continued until the business decreased to such an extent that of these five factories, all but one of them found it convenient to take up some other line of manufacturing, to make somthing else besides of building blocks.

Now, the question has been well put by Mr. Lansing and Mr. Wheat. What are you going to do about it? I am going to serve notice, Mr. President, that if the feeling is present here, I will be pleased to make a motion to appoint a committee, a Publicity Committee, or anything else you may wish to call it, to take up this matter, give it consideration and report to the members of this convention as to what action may be necessary, and then see if we cannot do something feasible, that won't be a heavy tax on any of us, to advertise the clay business. In this connection I want to say also that I have come to the conclusion that it never pays to knock the other fellow because you only advertise him. Put the energy you would put in knocking the other fellow in this case cement products in advertising yourself and your goods. (Applause). I, for one, am in hearty accord with anything that this convention will propose or recommend that tends to advertise the clay business and to bring the clay products before the people of this state. I will not make this motion until I hear from some of the gentlemen. Or perhaps some one else cares to make it. But I want to do something. I am for action. I hope that we will take some and won't drop this subject.

Mr. Blair: This may be a matter which will determine the interest which we individually take in our business. Now I differ a little bit from the last speaker on the floor. I don't think that we ought to believe that our business is to survive because it is the fittest. We ought to advertise our own goods because we are conscious that they are, and believe that they are, the best. We ought to be right under all conditions and circumstances, and when a man comes in our way that is wrong in his belief or in his practice, I believe that we ought to knock him and knock him hard. At the same time, the merit of our clay goods will never be appreciated and never be felt with the force that it ought to be felt and with the appreciation that ought to come with its use unless we advertise our own goods and obtain that appreciation among the people. The people of this country are so engaged in their various callings that you have to stop a person and ask him to hear you in order to do that person good. The commercial mistakes of the world are only banished by first a man being right as to his goods, and then making a customer believe that he is right. But back of all that you never can accomplish either of these things unless you are enthusiastic about your own goods. If you believe in your goods, and if a man is doing a wrong thing, if he is engaged in a wrong practice, if he is using cement for a purpose where it would prove beneficial or proper for him to use clay, if in ordere to show him you have got to knock on the cement, you should do it.

Now, as to the way of accomplishing all these things: That is another question and a very grave one. The great trouble that is met with by a Publicity Bureau in this country is the difficulty of engaging the support of every one in the business. That is the problem that must be dealt with. It is the practical question. How are you going to do it? Here is one man over here in a small town. He manufactures probably one or two million. You ask him to help. He says, "Well, I am pretty well satisfied with my business here; I sell all I can make in my community." And he feels satisfied with the situation. He does not help at all. The only way in which that man can feel kindly and interested, even in his own business, is to shove him into it. And if some fellow ships into his locality fifteen or twenty cars of brick, that fellow is then ready to help. He is ready to roll up his sleeves and do most anything to get out of the trouble he finds himself in. But how is this thing best to be done? I feel myself that the brick manufacturers of this country are isolated on this question. Something ought to be done.

At the last meeting in the National Association there was a committee of Publicity appointed. I can not give you the information exactly that you would like to have, from memory, but the chairman of that committee sent out all over this country for $2 from each manufacturer to start with, and he didn't get a response from one-twentieth of one per cent. of the manufacturers in this country. That is just how much enthusiasm seems to prevail. There is another thing that ought to inspire us, however, to a little more enthusiasm and that is this. The vacant place that is made for this business to enter is already at hand. The Congress of the United States, and the President of the country, and students have already alarmed the entire country with reference to the conservation of the natural resources of the country, and their attention has not been called to any one thing that is more important than of the loss and disappearance of the building material throughout the country. I have tried to suggest that the way to try to conserve our natural resources is to develop those that are undeveloped and will take the place of those things that are being taken down and worn out and passing away. And the chief thing that lies before us to conserve, when we are losing our forest resources of this country, is to uplift and build up the clay interests. (Applause.)

The President: I don't see how this Association can authorize a committee to do any work until we have dues of $20 or $25 a year. I don't see how we can do it. We never have had money enough.

Mr. Walter: I made up my mind that those men who make the most brick paid the least. I don't care about paying for anybody else if it doesn't benefit me. I paid my $2 but it is the last $2 they will get from me.

Mr. Gibson: I paid my $2. That was just preliminary, to get some literature out. I am surprised at Mr. Blair's statement that there was so few people responded. We have the problem here. I was at the National Association of the "Ad" writers and a respresentative was there from some concret firm—concrete block firm—who has been taking page upon page in the different journals. He told us of schemes and plans and systems in their one little business that would make us fellows ashamed of ourselves. No man can afford to run a National campaign in advertising—unless it is the Hydraulic Brick Company. But each man can put his shoulder to the wheel. We should have a committee to make suggestions and devise ways and means. There is a cement man advertising in every trade journal in the country. I am not saying how we are going to do this thing because that takes careful consideration, but we must do something. (Applause.)

The President: There was a motion made to appoint a committee last year, but there was none appointed because there were no funds. Mr. Hartwell cannot be expected to pay for all this printing and postage.

Mr. Mamer: I will make a motion that the President appoint a Nominating Committee before we adjourn to-night.

The President: No, I will do it to-morrow morning.

Mr. Mamer: And let this committee name a Publicity Committee. I am willing to help.

The President: Well, I may do so. Do you make that as a motion?

Mr. Mamer: I make a motion that the nominating committee select a committee as a Publicity Committee.

Mr. Lansing: I wish to make an amendment to that motion, if Mr. Mamer is willing to accept the amendment, that the committee to be selected by this nominating committee get together this afternoon, and report to this convention tomorrow their recommendations and suggestions as outlined by Mr. Gibson, not only as to the plans for their work, but the ways and means for so doing. Otherwise the same thing will happen that happened a year ago and nothing will be done for another twelve months. I will make that amendment.

Mr. Mamer: I will accept that amendment.

Mr. Blair: I think that the thing to do is to appoint such a committee for the purpose of getting at the bottom of the methods by which the association should try to do something in this behalf. It is not worth while to appoint a Publicity Committee, but rather a committee that should take the subject under consideration and advise what should be done. That is a problem that is uppermost all over the country. I think that is the purpose that should be in mind in the appointment of this committee.

The President: Gentlemen, you have heard the motion. Without repeating, you understand the motion, I suppose. The motion is carried unanimously.

President Hammerschmidt: We will take up the next paper on the program. The subject is the "Manufacture and Use of Pyrometer Cones, What They Are, How They Are Made, and What They Are Intended to Do,'' by J M. Knote of the University.

MANUFACTURE AND USE OF PYROMETRIC CONES

The clay industry, more than any other, depends for its success on a careful control of temperature. Other industries demand temperature control but only within comparatively broad limits. In our metallurgical processes it is necessary to reach a certain minimum temperature, but if the heat is carried beyond that point little or no harm will result.

Those who are burning clay wares are very well aware that in their case a certain minimum of temperature must be reached if their ware is not to leave the kiln in a soft condition, but also a certain maximum must not be exceeded if the ware is not to lose the properties which give it its commercial value. In some branches of the industry these temperature points are very close together, in others there is a longer temperature range between them.

Until a few years ago the experienced burner was depended upon to judge by his eyes as to what the temperatures were during the various stages of the burn and to determine when a kiln was to be taken off. This simple and fairly reliable system has been found to have some very serious disadvantages. It has been found that even the most intelligent and experienced men make mistakes, as it is not possible to judge temperatures accurately day and night under all conditions. A reliable, intelligent burner is a valuable man to have around, but he should be assisted in his work by a *system* of burning which depends on simple, inexpensive devices which can be relied on in every burn and which will indicate conditions and changes in the kiln which no man can determine by any of his senses.

Since it is desirable to use means of measuring temperature, we will consider briefly the instruments a manufacturer may employ for the purpose. All temperature measurement depends on observing some property of a substance which is changed by heat. In the list of substances which nature has provided us, all suffer changes of their physical properties under the influence of heat and many undergo chemical changes. The effects which are of value to us for the measurement of temperature are expansion, contraction, fusion, electrical resistance, amount of heat absorbed by a substance, or specific heat, thermo-electricity, spectrophotomety, etc., etc. To illustrate: Under the head of expansion we might mention the ordinary mercury thermometer where the column of metal rises and falls due to its expansion and contraction under the influence of heat. The old Wedgewood pyrometer was designed to indicate temperature by the shrinkage or contraction of clay cylinders. Again, if a metal or cone is put into a kiln it fuses when the heat effect has reached a certain amount and thus tells us what the heat of a kiln is. It can readily be seen that any property which is to be of service to us for the purpose of temperature measurement must always be the same at any given degree of heat. (2) The change produced by heat must be great enough to be readily observable. (3) The instrument, if to be used must be inexpensive and one which can be manipulated readily by an inexperienced man. Many instruments invented are of no practical use at all, others give most excellent results in the hands of experts, while but few meet the requirements of clay workers. Fortunately, however, there are instruments made which do meet all requirements for ceramic uses. For this purpose an instrument must be fairly accurate and so made that it will not readily get out of order, and cheap enough to allow its use in practically every plant.

The instruments which *are* of value to clay workers are of two classes, first, those for low temperature work, used in the dryer and during the water smoking period of burning, and second, those used during the last of the burn for the measurement of the higher temperatures.

The dryer is the first place during the process of manufacture in which clay ware encounters heat. As we all know, tender clays require carefully regulated conditions in the dryer if they are to come through in a sound condition and fit to go into the kilns. Others will stand almost any treatment during drying. However, it is to the interests of all manufacturers, whether they are handling a tender clay or not, to have their dryer conditions carefully regulated to insure that all ware going into the kilns has been thoroughly dried. Many plants which have an abundance of heat available for drying have wet brick going into the kilns simply because no one seems to have the time to watch things closely enough. There can be no doubt when everything is considered that careful supervision of the dryer pays. The best way to do this is by use of a recording thermometer. This instrument is provided with a dial like the face of a clock on which the hours of the day and degrees of temperature are marked. A pen point traces a line over the dial showing exactly what the temperature has been for several hours back. This enables a superintendent to look over the dryer temperature for the day and make inquiries if the temperature has not been kept as it should be.

Passing from the drying to the burning we may say that ordinarily a kiln is put on fire and the heat raised to the finishing point without the progress of the temperature being watched in detail. All recognize that there are advantages in carrying the temperature up as fast as possible without spoiling the ware. It is impossible for even the most experienced burner to tell just what temperature he has in his kiln fro mthe time the fires are lighted until it begins to show red. He knows that if he goes too fast he will spoil the ware, but if he does not go fast enough he loses time. The only way to know what temperature you have in the kiln during this period and when you have the best temperature is by use of a water smoking thermometer. This instrument is a long-stemmed mercury thermometer made of special glass and protected by a metal case. With such an instrument the best rate of heating up can be established and the burns can be carried on as rapidly as possible without endangering the condition of the ware.

For tender clays or high priced ware a recording thermometer similar to the one used in the dryer and reading to 500 F. is coming into use. By means of these instruments all guesswork is removed and the heat can be raised as gradually as is desired without losing any time.

After the kiln has gotten red we must discontinue the use of the instruments designed for low temperature work and employ the high temperature group. In general, we have a choice of two instruments for this purpose; namely: the pyrometer and the pyrometric cones. The pyrometer is constructed on the principle that when the junction of two dissimilar metals is heated an electric current is set up. .The degree of heat determines the magnitude of the current, and this is indicated on a suitable dial.

The other important device for determining the finishing temperature is the Seger cone. In 1886, Hermann August Seger, of Berlin, Germany, published an article entitled: "Standard Cones for the Measurement of Temperatures in the Kilns of the Ceramic Industries." It would be of no interest to us to state just what the contents of that article were, but it will be sufficient to say that here we have the beginning of the pyrometric cone which has come to be so useful in many of our clay working industries. Similar devices, such as Holdcroft & Co.'s patent thermoscopes, etc., have sprung up from time to time, but they are no improvement on the original idea. However, Seeger's original series has been much extended and improved, especially here of late, so that now you can get cones which cover the range of temperature from a barely visible red heat up to a dazzling white heat much above the melting point of the most refractory fire clay. Of course, no one firm would use all of these cones, but there is a demand for all of them.

The constituents of this long series of cones vary greatly, but we may consider that four materials are the basis of the cone industry; namely: clay, flint, feldspar, and lime. The clay used must be the purest variety obtainable. In general these will be the high class washed Kaolins which come as near being pure clay as anything that can be gotten on a commercial scale.

The flint is prepared by several firms in this country, by grinding the flint rock to a very fine powder.

Feldspar of the Orthoclase variety must be used, it being prepared in much the same way as the flint.

The source of the lime is the English chalk. This is specially purified and made up into a fine white powder ready for use when received.

These same materials are used by the white ware potters in making our tableware, fine china, etc.

Some of the cones may be regarded as whiteware bodies and some of the lower ones as glazes. The lower red cones, while not of the same color as the others, are as a matter of fact, similar in composition.

One of the greatest troubles which the cone maker has is the fact that slight impurities in his materials will destroy the accuracy of his cones, and also, it is almost impossible to buy raw material from any firm which does not vary somewhat in its physical and chemical properties. It seems to be a rule of nature that no two people are alike and it is almost as true that no two clays or any other natural occuring materials are just alike. For purposes of brick making a given clay deposit may be considerd as very uniform and the slight variations are not noticed. If this same clay was used for pottery work these slight variations might be great enough to cause serious trouble and it is entirely probable that the cone maker could not use it at all.

The best materials obtainable are demanded by the potter, but even when he gets them he must be very careful or the variations which occur in natural materials will cause him many losses. While potters have trouble from this cause they don't compare at all, either in number or magnitude, with those the cone maker must combat.

If all the materials in this country were uniformly pure, reliable formulæ could be given for cones, and a person using the formulæ could expect to get accurate results. As it is, each cone maker must work out the formulæ which will give the results when he uses the material he happens to have.

In a factory where reliable cones are made, materials are selected as follows: Small quantities are gotten from reliable dealers who are known to carry large amounts in stock. Cones are made from the material and tested against satndards. The material is also carefully analysed to detect impurities, which, if present, would cause trouble. If this small batch turns out satisfactorily, about a ton of the same stuff is ordered. This is carefully sampled and analysed, and cones are made and tested. If everything is satisfactory, a carload will be ordered. This will be sufficient to run for several years, and will insure that this material will cause little trouble when used in making up the cones. It might be supposed that it would be easy to find just the right material for cone manufacture, but in reality it takes quite a bit of time and work and the manufacturer must start his hunt while considerable of his old material remains.

After the proper materials have been secured it then takes careful work to prepare good cones out of them. A brief description of the manufacture may be of interest.

First, the constituents of the batch are carefully weighed out and placed in a large ball mill, which is a cylindrical drum fixed so as to rotate on a horizontal axis. This drum is about half filled with large flint pebbles. About 400 lbs. of cone mix is put into the drum and the lid fastend on. When the machine is started the pebbles and cone material fall in a shower against the sides of the drum and this keeps up as long as the machine is running, having the effect of grinding and mixing the charge. After this, the material is sufficiently ground and mixed and a small batch is made into cones. These are put into a kiln, and tested together with some stock cones, some standard cones, and a pyrometer. If any irregularity is observed the composition of the whole batch is corrected until it comes right.

The standard cones here referred to, are cones which were made up with the greatest care. They were then standardized against the best German cones and a pyrometer. They were carefully boxed up and kept for reference, none being sold. These are used to determine whether the cones for sale are accurate. So all cones which go out must be tested against these standards.

After a batch of cone stock has been proven to be all right, it is mixed with a little dextrine to stick it together and is then molded into cones by the use of iron molds.

When taken from the molds the cones are carefully dried, samples are taken and tested and if found all right, the cones are packed in sawdust in boxes of fifty and are then ready for shipment.

When placed in a kiln, what is it that cones measure; is it temperature, heat, work, or what?

Burning clay ware is a way is a great deal like baking bread. In case of the bread, a certain temperature is attained in the oven and this held constant until the bread is done. The mere raising of the temperature to the desired point does not produce good bread, but you must leave it until the heat has gotten its work. The temperature does not go a bit higher during the baking of the bread than it was at the start, yet a very great change is accomplished. However, we all know that bread won't bake unless the temperature is high enough. This gives us a pretty fair idea of the direrence between temperature and heat work.

It is possible to raise ware to a certain temperature and have it come out in good condition. It is also possible to raise ware to the same temperature and overburn it by holding it *long* enough, and without raising the temperature a fraction of a degree further. Of course, the point at which this can be done varies with different clays, and the action takes place very much more readily with some than with others. Why is it that a change takes place while the temperature remains constant? Simply because the heat keeps on working while the temperature may remain stationary or even falls slightly.

Seger cones are made of about the same constituents as our bodies or glazes and as a result are subjected to the same chemical and physical changes under the influence of heat.

The reason cones are more valuable to the clay worker for some purposes than *any pyrometer,* is then very evident, because they are measures of heat work or the *effect* of heat rather than temperature. It is fairly easy to *show* this. Put a pyrometer in a kiln and bring the heat up until it is registered as a certain number of degrees on the pyrometer and a certain cone goes down, then hold this temperature for awhile. Finally, without the pyrometer changing at all, you will see the next higher cone going over, showing that the heat has affected it. Not only that, but it shows that the ware has been affected at the same time, since we are measuring like with like.

Also, by use of a test kiln, it can be shown that cones will go down at a lower temperature if the burn is a long one, say four or five days, than they will in a twenty-four hour burn; in a long burn, the heat gets more of a chance to work on both the cones and the ware and so they mature at a lower temperature. Cones don't measure temperature, they measure heat work and it has been remarked that it is a misfortune that they were ever given melting temperatures in degrees.

The pyrometer is a good instrument for getting the progress of the burn. It will give the rate at which the temperature increases or decreases, but it measures temperature only and not heat work.

For wares of thin cross section as pottery, etc., the cones are of more value for determining the finishing point of a kiln than the pyrometer. Where brick are being burned, some manufacturers bring the heat up until the pyrometer shows the temperature to be high enough and then they hold it for a period of time which has been determined by trial. The pyrometer may give good service in this way. However, some think that the best results in brick burning taking everything into consideration will be gotten by use of trials, measurement of settle, and the placing of cones in the bottom of the kiln to enable the burner to know just how hot the bottom is.

Like everything else, cones must be used properly if they are to be of any service to the burner. For instance, they must not be put where the flame will strike them, or where cold air can get at them as in front of a peep hole, and they must not be pushed over with a rod or other implement.

Of course no one should expect the cones to produce good burning by themselves, they are to be regarded as only an inexpensive help toward producing a good produce.

Prof. Knote: The following are a few facts about the "Use of Pyrometer Cones" and about the particular branches of the industry in which they are used:

It is a fact that practically every American manufacturer of whiteware uses the cones. It used to be that he would take off his kilns, practically entirely, by means of trials, but he has gone over to the cone system. In the manufacture of terra cotta, enameled brick, etc., the cone system is used quite extensively, although some prefer to determine the finishing point by taking draws.

In the manufacture of brick, the cones are not used nearly as extensively as they are in the manufacture of higher grade wares. Many manufacturers use nothing but the taking of draws to assist the burner in determining when a kiln should be taken off.

Many have found that the measurement of settle helps them greatly both in watching the progress of a burn and in determining the finishing point, and there is no question but that this is a valuable measurement to make. Even with the settle system, some prefer to put cones in the bottom of the kiln, since the measurement of settle is not always a reliable means of determining the temperature in that part. It is a well known fact that you can burn the top hard and the bottom soft and perhaps get the same settle that you would if the kiln had been burned uniformly at a somewhat lower heat. So cones are a help in watching the bottom.

Mr. Powell: I want to ask why the pyrometer is not reliable for determining the finishing heat on the kiln, as I understand the gentleman to say when he was reading his paper?

Mr. Knote: Simply because the pyrometer measures nothing but temperature. It is not the temperature, but the heat work, which you want to measure in a brick kiln.

The pyrometer is a valuable instrument when used properly, and if a brick maker cares to pay the price for one, and sees that it is kept in order after he gets it, there is no question that he can find use for the instrument. It will enable him to see how a kiln is progressing without going out of his office if he makes proper arrangement, or by buying a recording instrument he can look over the records and see just what has gone on during his absence. However, the instruments are expensive and are more or less delicate. It is possible to get much valuable information by their use and after having the proper amount of experience with them, they can be used more or less satisfactorily for determining the finishing point, say by holding the kiln at a certain temperature for a number of hours.

The pyrometer and the cone each has its field, and each gives more or less information which the other will not, and as I said, the cone is better than the pyrometer in its own field.

Mr. Mamer: I would like to ask whether there have ever been any experiments in making cones of a larger section than those commonly used. It strikes me—especially in burning brick—that a cone of larger cross section would be very valuable for the reason that it would take longer for the heat to penetrate to the center of that cone, the same as it does to the center of a brick. For example: In burning drain tile, especially the smaller sizes, they are not much thicker in cross sections than the cone is, and for that reason I believe that the cone, especially if you are burning brick, it would be of advantage to have it of a larger cross section. I would like to ask if any experiments along that line have been made?

Mr. Knote: I don't know whether this has been tried or not, but if it was, the cone maker would have to raise the price, since his materials would cost him more.

President Hammerschmidt: The next on our program is a paper "The Outlook of Illinois Clay Industries," by Prof. A. V. Bleininger, of the United States Geological Survey, now at Pittsburgh, Pa.

[This paper will appear in full in the March issue of CLAY RECORD.]

Dr. Converse: Mr. President, I was very much pleased with that optimistic and thoughtful essay of Professor Bleininger. It was encouraging to me and I hope it will encourage us all. It looks as if our mud workers would have enough to do to keep up with the times. It certainly is very encouraging. I believe that the trade is going to increase more and more and men whose means are in the work are going to find enough to do to justify more than fair compensation.

While I am on my feet I am going to say one word more. Our President is open to a good deal of criticism for having selected me as Toastmaster at the Banquet tonight. I agreed to do the best I could, and if some of you have something to aid our digestion, I will be very glad to hear from you. If you can do anything to make the entertainment more cheerful, I hope to hear from you. I will say, before sitting down, that there are two or three of the Professors who are to take part in our exercises. They are men who are away up, and you will find that the banquet will not be a slow moving concern.

President Hammerschmidt: Mr. Hartwell will explain the arrangements regarding the banquet this evening:

Secretary Hartwell: The banquet will be in the banquet hall of the Hotel Beardsley and at 8 o'clock sharp. It will be given in lieu of the supper. All members stopping at the hotel when they go back there will find a green ticket in their box there. If you go into the regular supper the card will be taken out and a ticket to the banquet will cost the Association $1.50. All members who are not stopping at the hotel will receive from me at the door a yellow admission ticket so that all are provided for, whether they are stopping at the hotel or not. We want everyone to attend. We have a treat for you tonight.

The President: Is there any other question while the Professors are here? If there is none, I will name the nominating committee, to report tomorrow forenoon. That committee will be:

C. C. Barr, Streator; Geo. J. Walter, Chatsworth; D. C. Haeger, Dundee; L. H. Lambert, Beaverville; Geo. B. Roller, Canton.

The President: Gentlemen, I now call on any member to bring up for discussion any subject he may wish.

Mr. Pratt: If it is in order now, I would like to ask one of our Professors to please tell us the position in which you would set the cone in the kiln to get the best results? Whether it should be set perfectly straight or on an angle? I have had some experience in that line. I would like to know whether there is any encouragement to let them go down when they ought to?

Professor Knote: In using the cones, it is very important in every case to use them properly. When the cones are not properly used, they might as well be thrown away. In direct answer to Mr. Pratt's question, I would say that the cones should be tilted slightly. They should not be tilted too much, however. If they are bent over that way (indicating) they will go down too quickly, but if they are set straight up, they will not go down as they should. They should be tilted slightly and set so that the slant will come toward the number which is on the face. If they are used properly, they will give reliable results.

Mr. Wheat: Will a slight cooling of the cone have any effect on it?

Professor Knote: It is always best to allow no draft to strike the cones, if you can help it. If you put the cones in front of the wicket when it is leaking, and they are kept cool from start to finish, the results will be in accordance, but if you keep your wicket tight, it is all right.

Taking the manufacturers of, say, vitrified floor tile. It is their habit to take an iron rod and shove in close to the cones. That will cool the cone slightly and enable you to see it. That is legitimate, if you do not do it too often.

President Hammerschmidt then read the questions that were on the program for discussion:

What is the cheapest method of getting clay to the plant?

Would it be profitable to strip clay beds by hydraulic methods in plants of 30,000 to 35,000 capacity?

The clock, however, had long ago passed the hour of six and the members in general indicated a desire to prepare for the banquet, however much they were interested in the subjects.

A motion to adjourn to Thursday, at 10 o'clock, was put and carried. And so closed the second day of one of the most successful and interesting conventions ever held by the clay manufacturers of Illinois.

Last Session in Next Issue.

A FIND OF KAOLIN AND PAINT MATERIAL

While driving tunnels into a hillside on a vein of potter's clay at Lewis Kauffman's ranch near Grangeville, Idaho, southeast of Spokane, Wash., the miners encountered what are believed to be inexhaustible beds of kaolin and a vein of almost pure mineral paint when in 60 feet. The clay has been assayed in Spokane and Lewiston, Idaho, and the experts' reports show it is of high grade and will withstand 1,500 degrees fahrenheit. The principal vein is pure white kaolin, while the lower strata is of a rich brown color. The paint vein appears to be uniform. The clay is soft and pliable when mined, but hardens quickly. No timbers are required as the face of the wall hardens and supports the roof. Fenn Batty and A. F. Parker, who own the adjoining ranch, announce they will organize a company to finance the proposition with a view to establishing a pottery works. It is likely, however, that the clay will first be used in the manufacture of brick at Grangeville. There is more than usual interest in central Idaho and eastern Washington over the discovery. Experts are of the opinion that the deposits are of great extent and that several important industries will be established at or near the Kauffman ranch.

BRICK MANUFACTURERS AGREE ON PLAN

Leading brick manufacturers of Chicago are reported to have agreed upon a plan to raise the price of their product from $5 to $6 or more a thousand. Attorneys are said to be examining the terms of agreement to determine its legality under the antitrust laws of the state. Two years ago a "pool" was formed, but the past was broken by a number of independent manufacturers.

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

A man seldom gets very angry when he has only himself to blame.

Try an ad in the only semi-monthly clay journal that is printed in America. It will pay you. Try it.

Just about the time the man succeeds in accumulating all the money he wants, the alarm clock gets busy and wakes him up.

"The relation of dividends to sales is about the same as the relation of oxygen to water; without oxygen there can be no water and without sales there can be no dividends "

A golden rule for business men: "If anything happens of importance, give the news to your trade press, then it will be published as you wish it published and as it should be published, and not, perhaps, as your competitor wishes it published."

Publicity is the same as when you build a house you must place each brick in the right place in relation to each other. Publicity is what makes a valuable asset of your trade mark. You must make each dollar you spend effective. You can do so by keeping everlastingly at it. This can be done only by the use of your trade journals, for with them and them only can publicity be effective.

Did you subscribe for the Clay Record this month? If not, it is not yet too late. Send in your money today.

Minneapolis has the right dope. It has passed an amendment to its building laws compelling every owner who builds a reinforced concrete building to have a specially licensed building superintendent constantly in charge of that work, one directly responsible to the city for the efficiency of his superintendence.

AMOUNT OF BRICK IN YARDS ALONG HUDSON

Investigation of the amount of brick in manufacturers' hands along the Hudson by President William K. Hammond of the Hudson River Manufacturers' Association, discloses a smaller quantity in the aggregate than at the corresponding time last year, but considerable more than was usually reported annually in previous years. Mr. Hammond says there is plenty of brick for all demands; that manufacturing will be resumed early in the spring, and any apparent shortage then will be more than made up in the early part of the season.

Quotations for Hudson River common brick are now on a winter basis. The river is closed to navigation north of Rockland Lake, leaving the nearest shipping point for brick inaccessible. The available stock in the market is considered ample to supply the demand until navigation shall be resumed. Quotations are nominally from $7 to $7.25 for material from covered barges, but only a few sales so far been reported in which the higher figures were obtained.

A WISE POLICY

Andrew Carnegie believes that were the principle of profit-sharing and joint ownership in our manufacturing industries by employes to be more general, a long stride would be made in promoting harmony between labor and capital and in minimizing industrial disturbances.

Some years ago the United States Steel Corporation made a move in this direction by offering to its employes an opportunity to obtain stock in that company on favorable terms. A large number—a matter of about 30,000 of them took advantage of it, and it has not only proved a good investment for them, but the corporation has unquestionably profited by it also.

It is a significant fact that there has been a remarkable immunity from strikes or serious labor trouble in the plants about the country operated by the steel trust, and while this may not be due entirely to the community of interests existing because so many of the workmen are stockholders in the company, it has undoubtedly been an influential factor in promoting the peaceful and amicable conditions that have prevailed between employers and employes.

Something along the same line of policy has long been observed by some of the manufacturers of fine pottery in Trenton, where interest in the business on the part of employes has been stimulated by the award of prizes to men for new "ideas" or valuable suggestions in methods, designs. etc. "Every such concession tends to promote better feeling between employer and employe, sweeping away old prejudices and inspiring the men with confidence in the good intentions of those who are higher up."

At the same time it offers an incentive to everybody in the service to do his level best, and thus all contribute to the general prosperity of the establishment. It means team work, and team work wins every time.

ACCIDENTS, DAMAGES AND LOSSES

Lewis Hunter a machinist at the North Iowa Brick & Tile Co.'s plant at Mason City, Iowa, had one of his arms torn from his body by being caught in the belting.

The Alma National Bank has filed a suit against the Kaw Valley Brick & Tile Mfg. Co., Kansas City, Mo., alleging that the company owes the bank $2,600 on a promissory note.

The directors of the Nelson Brick Co., Mound Valley, Kan., decided to make the repairs on the plant which were caused by a wind storm blowing down the kilns, etc. The loss is $5,000.

John McFeeley, charged with stealing brass fixtures to the amount of $400 from the plant of the Rushville (Ind.) Brick Yards Co., entered a plea of guilty and was sentenced to state's prison for a term of from 1 to 14 years.

The Chanute (Kansas) Brick & Tile Co. gets out a temporary injunction prohibiting the Gas Belt Fuel Co. from shutting off gas at its plant so as to furnish it to another company, of which the stockholders of the gas company are interested.

Charles E. Henson of the firm of Henson Bros., brick manufacturers at Hagerstown, Md., filed a bill asking the court to appoint a receiver for the partnership claiming the brother, D. N. Henson, had collected moneys and failed to turn them into the firm.

Senator John B. Rose, Roseton, N. Y., has had a decision rendered in his favor by the court of appeals, in the suit brought by his brothers to remove him from the management of the Rose Brick Co., as trustee under the will of his father. The lower court gave the same opinion four years ago.

THE EFFICIENCY OF BRICK

In these times of great building activities, the matter of first importance to the general public is the efficiency and merit of the various building materials now being presented to those intending to invest their money in the construction of buildings.

As a building material coming down to us from the very earliest age of the world's history, the efficiency of burnt clay products over all other materials has been practically demonstrated by the experience of centuries. It is a fact, that good hard burnt brick, properly anchored and bonded with good mortar, is a fire resistant infinitely superior to anything else that has yet come under the observation of man.

A steel frame building, which frame supports the weight of the different floors, is conceded to be the most modern design of architecture.

This class of building, to be made absolutely fireproof, must have its outer walls built of some incombustible material, preferably brick, its columns also protected, and its floors and partitions correspondingly fireproofed.

Such is the opinion of the most noted architects and building engineers in this country.

(Contributed to The Architect & Engineer by the Ceramic Club of San Francisco.)

THE BILL FOR ILLINOIS CERAMIC SCHOOL

An Act making appropriation for the ordinary and other expense of continuing instruction and investigation in ceramics:

Whereas, The phenomenal increase in population of this country, together with the rapid disappearance of our forests, makes it certain that we cannot longer rely on lumber as our main source of building material, and

Whereas, Illinois abounds in clays suitable for the manufacture of a great variety of structural materials, and

Whereas, It is desirable that exhaustive studies of these clays, and of similar substances, be made to the end that the greatest variety and highest possible quality of the building materials and other clay products used in this state may be provided from her own resources; and that young men be thoroughly trained in the physics and chemistry of clays and in a knowledge of the changes they undergo during the progress of manufacture so that our factories may be controlled by men trained to see opportunities and skillful enough to meet new demands in structural materials, and

Whereas, The work already accomplished by the Department of Ceramics at the University of Illinois gives promise of its future usefulness along these lines;

Be it enacted by the People of the State of Illinois Represented in the General Assembly:

That the sum of twenty-five thousand (25,000) dollars, or so much thereof as may be necessary, be and is hereby appropriated for a building suitably arranged and equipped for work in ceramics,

That the sum of fifteen thousand (15,000) dollars per annum is hereby appropriated for salaries, investigations, apparatus, and ordinary expenses of the department.

The Auditor of Public Accounts is hereby authorized to draw his warrant on the Treasurer for the sums herein appropriated, upon the order of the Board of Trustees of the University of Illinois, attested by its Secretary and with the corporate seal of the University.

BRICK MANUFACTURERS WANT NEW SAMPLE RATES

Brick manufacturers, it is understood, are demanding a revision of express rates on samples. The submitting of sample brick has become quite general with the increased use of other than the common red sorts and these, it is alleged, have heretofore been billed as "Merchandise" and have been charged, as such, at the highest rate. It is pointed out that, as sample bricks have practically no intrinsic value, manufacturers should get the benefit of the same rate charged for samples of wallpaper, burlap, plaster and a number of other commodities. It is asserted that, so far, the express companies have not given any adequate reason for the existing rate.

John F. Lent, a shipping agent of Pittsburgh, Pa., has collected a mass of evidence from the brick manufacturers, including letters which show that thousands of dollars are paid each year in the form of express charges on samples. Unless some arrangement or compromise can be made with the express companies, he says, this matter of what is held to be an excessive charge will be laid before the interstate commerce commission and relief sought from that source.

THE ILLINOIS CLAY MANUFACTURERS' ASSOCIATION BANQUET

Never has there been a better banquet, a better spread, or better speeches than there was at the 1909 banquet of the Illinois Clay Manufacturers' Association, which was held in the banquet hall of the Beardsley Hotel.

At exactly eight o'clock, the time specified, the orchestra began and imbued everyone with the good spirit, the banquet doors were thrown open and some one said: "The music is on, let your joy be unrefined." Spaces were reserved at the speaker's table for the officers of the Association, the toastmaster, and those that were asked to respond to toasts.

The following is the menu and the toasts:

MENU

Consomme Asparagus
Bread Sticks

Celery Queen Olives

Baked Oregon Salmon, Herb Sauce
Potatoes a La Victoria

Fillet of Beef, Financiere
Snow Flake Potatoes Fried Salsify

Angelica Punch

Roast Young Poulet, Oyster Dressing
French Peas

Head Lettuce, Mayonnaise

Tutti Frutti Ice Cream Assorted Cake

American Cheese Crackers

Coffee

Cigars

TOASTS

Toastmaster
Dr. A. L. Converse, Springfield

I. O. Baker, ... Champaign, Ill.
"They that live in glass houses should not throw stones"

Peter B. Gibson, ... St. Louis, Mo.
"Missouri"

Dean Kinley, ... Champaign, Ill.
"An Education for Business"

Martin W. Lauer, ... Chicago, Ill.
"Sunshine and Shadows"

J. W. Robb, ... Clinton, Ind.
"Hoosiers"

President E. J. James, ... Champaign, Ill.
"University"

O. M. Carter, ... Mexico, Mo.
"Brotherly Love"

Father Beardsley, ... Champaign, Ill.
"Time"

D. O. Loy, ... Sheffield, Ill.
"The Tile Maker's Dream"

U. S. BRICK CREDITORS GET THE OAKS PLANT

Harry F. Kantner, as counsel for Edward D. Trexler, trustee in bankruptcy of the Montello Brick Works, Reading, Pa., received official notice from the clerk of the U. S. District Court, Phila., to the effect that this Court has dismissed the petition of the Montello Brick Company, asking for a review of the legal points in an important decision by Judge McPherson of the U. S. District Court a few months ago.

The latter, in an opinion which was quite lengthy, affirmed the position taken by Referee S. E. Bertolet, directing that the Oaks plant at Perkiomen, as well as two large steam shovels at the Wyomissing factory, be sold by Trustee Trexler for the benefit of the creditors of the brick works, having been constructed out of the earnings of the concern.

The Montello Brick Company resisted this, holding that all improvements revert to it at the termination of the lease which was declared forfeited. The forfeiture was annulled since by Judge McPherson.

The decision will benefit creditors whose prospects of realizing anything on their claims heretofore were very slim.

Mr. Trexler will now proceed with the sale of this property as will be seen by the advertisement on page 37 of this issue of the Clay Record.

The Oaks plant cost upwards of $770,000 and finally precipitated the financial difficulties. Some claim its actual cost is nearer $1,000,000.

It is equipped with splendid Corliss engines, and the kilns, if dismantled for scrap iron alone, would net $15,000 to $20,000, it is said.

What the plant may bring at a forced sale is a matter of much difference of opinion. Mr. Trexler and his counsel believe it should not be sold for less than $100,000. Others think $50,000 more likely to be the figure. The Montello Brick Company has as chief counsel, John G. Johnson, of Phila.

Mr. Kantner's contention from the beginning of these proceedings was that the Oaks plant, shovels, etc., must be classed as "trade fixtures," to which the creditors were entitled.

Under part of the decision, the trustee has already disposed of some of these fixtures, but the greatest battle was waged over the Oaks plant. Mr. Kantner directed this litigation for Mr. Trexler and won. He is receiving many congratulations upon the latest decision affirming his position.

WILL MAKE ASBESTOS BRICK

Articles of incorporation were filed with County Auditor W. L. Gifford by the Spokane, Wash., Asbestos Fire Brick Company, with principal offices at Spokane and branch offices at Kamiah, near the asbestos rock deposits. The company is capitalized for $100,000, H. M. Roberts and T. G. Maloney of Spokane and Charles Hofstetter of Kamiah being the incorporators. Plans are under way for the construction of a factory at Kamiah to manufacture asbestos brick. Vast beds of asbestos clay are found near Kamiah, and when subjected to intense heat the brick have been uninjured.

PACIFIC COAST NEWS ITEMS

Building operations have been practically at a standstill ever since the commencement of the year, owing to the prolonged storms and brick manufacturers have done but little business other than take orders for future delivery. These are reported as being unusually heavy for this time of the year and the spring season is looked forward to as a record breaking one in San Francisco as far as construction work is concerned. The demand for buildings in the downtown section of the city is now greatly in excess of the supply and the spring building will be largely devoted to the construction of store buildings on the edge of the present retail district and to the construction of warehouses in the wholesale district. Practically all of the brick plants around the bay are closed at the present time, the unfavorable weather conditions having accomplished what was needed in the line of restricting the production. Many manufacturers are seizing upon the present opportunity to make needed changes and improvements in their plants and will make no attempts to re-open until May or June. Before this time there will be a considerable portion of the present stock taken off their hands and for the first time in many months the market will be in a really normal and healthy condition. Prices have been steadily strengthening of late, especially in the line of common brick and this article is now commanding a price around $9 per thousand, instead of $7 which was the prevailing price last fall. There is an increased demand to be noted for pressed brick and fancy tiling for facing purposes, and it is to be noticed that the use of stone for this purpose, and concrete as well, is not in evidence as it was a year ago.

Railroad facilities have been seriously impaired by the recent floods that have visited the lowlands of the state and some large plants, especially in the vicinity of Sacramento, are not only closed but have no means of shipping the product now on hand. The result is a decided advantage to plants operating in the vicinity of San Francisco for they not only have the local market to themselves, but are able to ship to some sections of the state usually supplied by the interior plants.

The brick manufacturers in the Northwest have been selling their product for the past year at bedrock prices but have recently come to an understanding and common brick is now selling at Portland, Ore., for $10 per thousand, an advance of $2 within the past few weeks. A large number of new plants have started up in the vicinity of that city during recent months and the output will soon be largely increased. It is thought, however, that there is a market for all that will be manufactured for stocks on hand are small at the present time and most plants have large orders booked for spring and summer delivery.

The city of Tulare, Cal., is agitating a sewer system and an election will be held shortly to provide funds for carrying out the proposed work.

The city of Santa Cruz is planning to make some substantial additions to its sewer system, and bids for furnishing the material will be called for within the course of the next month.

The Carnegie Brick & Pottery Co. has been furnishing a large amount of vitrified brick to the City of San Francisco for use in lining the new sewers now in course of construction and have orders enough for this material to keep the plant busy for several months.

The Bay Shore Brick Company is the title of a new concern that has been incorporated in San Francisco with a capital stock of $100,000. Those interested in the enterprise are C. G. Clarke, J. R. Buren, A. Johnson and P. Lewis.

The Great Western Brick Company has disposed of the bulk of its stock on hand and will re-open the plant as soon as weather conditions permit.

Gladding, McBean & Co. are having work rushed on the construction of their permanent warehouse in San Francisco. The removal of the office has been effected and this firm is now to be found settled in the Crocker building at Post and Market streets. The yards and warehouse is still out on Turk street, however. This firm is furnishing the material for the construction of the new Carnegie Library at Lincoln, Cal., where the main manufacturing plant is located.

A new City Hall is being planned for Sacramento, Cal., and the contracts for the furnishing of the brick will be let this month.

The bids for the construction of State Normal School at San Jose, Cal., were opened recently but were considered to be too high and were all rejected. Brick buildings have been planned, these to be of Mission design with red tile roofs.

Mr. Stern, the local manager of the Richmond Brick Company states that the plant of this concern is one of the few that has not been closed down on account of the storm. While it has been impossible to work at full capacity there has been a steady output all during the past month and no difficulty has been met in placing all that could be delivered.

The plant of N. Clark & Son, located in East Oakland, is quite busy at the present time on the manufacture of sewer pipe and terra cotta. While the demand for these articles is not very heavy at the present time, stocks are very low and it was thought best to stock up before the expected Spring rush.

The Corona Pressed Brick Company has just secured a large contract in Los Angeles for furnishing sewer pipe for that city. The initial part of the contract calls for three miles of eight-inch line.

The recent incorporation of the Pacific Coast Silica & Clay Co., at Portland, Ore., with a capital stock of $1,000,000, is looked upon by brick manufacturers as a significant event as it is known that concern is in possession of some very fine clay deposits. A. R. Bentley and T. R. Bentley of Portland are leading members in the new company.

The many friends of Frank Orpheus Woodward, the well known structural engineer of Berkeley, Cal., and an authority on brick of all kinds, will be pleased to learn of his marriage which took place in San Francisco early last week. The bride, who formerly was Miss Anne Briscoe, comes from Stockton where she was a social favorite. The couple have located in a home at 4401 Grove street, Oakland, Cal.

NORTHWESTERN CLAY MANUFACTURERS' ASSOCIATION ADOPT AND SEND RESOLUTIONS TO CITY OFFICIALS

Resolutions adopted by the Northwestern Clay Manufacturers Association, protesting against the manufacture and sale of brick by the Minneapolis workhouse, were sent to the mayor and various departments of the Minneapolis city government.

The association is composed of manufacturers and dealers in brick in parts of the state. At a meeting the 12th, a committee was appointed to draw up resolutions embodying the sentiment against such brick. The committee, composed of I. C. Jones, William M. Sargent and S. G. Johnson, completed its work today. The resolutions follow:

Whereas, our industry is threatened by unjust competition, and should the present plans of the city officials be carried out, our business would be obliged to carry the burden of supporting the criminal and pauper element of the city, in addition to our present equitable tax with other industries, and,

Whereas, we do not believe it just or fair that this burden should be borne by any single industry or class,

Therefore, be it resolved by the Northwestern Clay association, in meeting assembled, that we do earnestly protest against the City of Minneapolis through any of its departments or branches entering into the manufacture of brick or any other labor product; whereby the labor of the criminal and pauper class come in direct competition with honest labor or any established industry detrimental to its welfare or value of its property.

While we believe this class should be made self-supporting so far as possible, we believe it should be done in a manner to become a public benefit and not a special burden to any industry.

Although no specific recommendations are contained in the resolutions, members of the committee think the workhouse prisoners should do the work on the public roads and in the parks. If this system was employed, they say, no special class of trade or labor would have to compete with prison labor.

Officers were re-elected as follows: President, George W. Higgins; vice presidents, Philip Riedele, Chaska, and J. W. L. Corning, St. Paul: secretary, Rufus Morton, Princeton; treasurer, L. A. Boyce.

GOES TO LEAVENWORTH PRISON

M. G. McNaughton, formerly foreman for the Granite Brick Company at Burlington, Ia., has gone to Leavenworth, Kan., where he has been appointed foreman of the brick plant which the United States government has established in the big prison. The government has some $60,000 invested in the plant. Mr. McNaughton passed an excellent civil service examination and will no doubt make good in his new place. The local company was loath to part with him, but as the plant has been closed down indefinitely, they are glad to see him getting into a pretty good thing. The family lived on South Main street, and Mrs. McNaughton will soon follow her husband to their new home.

DALLAS MAKES AND SELLS MANY MILLIONS OF BRICK

Brick making is one of the leading industries of Dallas, Texas, and vicinity. The various yards have a capacity of about 500,000 a day. The four yards at Ferris turn out 50,000 each, and the fifth yard, which is about to begin operations there, will increase the output 50,000. Harry Brothers' plant, four miles west of the city, also has a capacity of 50,000 per day. The concerns at Mesquite and Palmer turn out each as many. Smaller yards are located at Carrollton and Irving.

The brick makers of Dallas produce more than a supply for Dallas and the near-by towns, and the surplus is shipped to all parts of the State. Dallas-made bricks are in the walls of buildings in Beaumont and San Antonio in South Texas, and those of Dalhart, in the extreme end of the Panhandle.

The shale deposits of this vicinity are indicated by the location of the plants, and they are said to be inexhaustible. At Ferris, as ascertained by the sinking of an artesian well, the depth of the deposit is 150 feet. At Harry Brothers' yard there is a mountain of solid shale.

All the manufacturers hereabout employ what is known as the dry process. They grind the clay as fine as flour and subject the bricks to a tremendous pressure, which forces the air from among the particles of the mass, which are then held together almost forever by the pressure of the external atmosphere alone.

In the early days of Dallas several plants were operated in the southern part of the city, but the limited shale deposits there were exhausted years ago by those pioneer manufacturers, S. M. Leftwich, the late Paul Jamison and others. Their successors have gone further out and found supplies of raw material which, it is said, will not be appreciably diminished when the buildings of Dallas are sufficient to house a population of 500,000.

BRICK BUSINESS LOOKS GOOD IN THE HOCKING VALLEY

The Columbus companies operating building and face brick plants in the Hocking valley, Ohio, are quite well pleased with the outlook for the coming season. While the majority of the plants had good stocks of brick on hand at the close of the last season several of them are now almost sold up and in addition have a number of prospective orders. Almost all of the plants have good orders on hand and it is said by officers of the companies that if present indications are an index to the business of the summer that all of the plants will be busy. There have been several new plants erected in the last year and it is probable that more brick will be shipped from Hocking valley points this year than ever before.

NEW YORK BRICKLAYERS MAKE AGREEMENT

The representatives of 14,000 New York brick-layers made an agreement with their employers. They get 70 cents an hour and double pay for overtime, Sunday and holiday work.

A CARNEGIE MEDAL DUE TO W. A. HANCOCK

Alderman William A. Hancock, of Atlanta, Ga., who represents the seventh ward in the general council, will probably receive a Carnegie medal for an act of heroism whereby he saved another life at the risk of his own.

Alderman Hancock, by risking his own life, saved that of R. A. Dempsey at the Bolton plant of the South River Brick Company.

The alderman, who is the general manager of the Brick Company, went to Bolton, and while there was standing with Superintendent Dempsey near a large cog wheel. In some way a rain coat worn by the superintendent was caught in the cogs and he was being rapidly drawn to his death when Alderman Hancock quickly seized him around the waist, and the struggles of the two men caused the coat to give way and Superintendent Dempsey's life was saved. If the coat had not given way, both Superintendent Dempsey and Alderman Hancock would have been ground to death between the fast-moving cogs.

Alderman Hancock's attention was first attracted to the danger the superintendent was in by hearing the latter cry out, "My God, I am gone." With an utter disregard of his own peril, the alderman, without a moment's hesitation, rescued the superintendent from a horrible death.

ELECT OFFICERS AND MAKE IMPROVEMENTS

At the annual meeting of the stockholders of the Devonshire Brick Company, which has a large brick plant at Roseville, and general offices in Columbus, Ohio, Warren B. Ferris was elected president, George J. Karb, vice president, R. C. Welker treasurer, William A. Shoemaker secretary and general manager.

Reports showed the company to be sold far ahead on its output, and it was decided to expend about $50,000 in doubling the capacity of the plant. The steam power will be doubled, large areas will be added to the drying sheds, much new machinery installed and other improvements made. It is said that practically all of the plants in that district are sold up for the coming year and several of them will early in the spring begin the erection of extensions in order to care for the increasing demand for their products.

BRICK PLANT WILL INCREASE POWER PLANT

The Alton Brick Company has given an order for two big engines, one a 600 horse power and the other a 250 horse power engine, to operate the plant. This is part of the plan for increasing the output from 80,000 to 200,000 brick daily. It was stated by the general manager, Eben Rodgers, that the engines will be used for generating electric power which will be transmitted throughout the plant to electric motors which will be attached to each machine. This system of power transmission has been found very economical and very effective. The present power equipment at this plant is 300 horse power. The increase in power means a general increase in the machinery at the brick plant, as mentioned in the Telegraph before and also means an increase in the number of hands to be employed.

POTTERY NEWS ITEMS

It is announced that a pottery will be established at Loon Lake, Wash., as soon as Spring opens.

The stockholders of the Whitehall (Ill.) Pottery Works held their annual meeting and re-elected the old officers.

C. D. Hyten and Arthur Dovey of Benton, Ark., purchased $3,000 worth of pottery machinery for additional equipment to their Eagle Pottery at Benton.

The Faience Pottery Co., of Tiltonsville, O., is making an experiment with a piece of ware that is to be used as a filter for water and if it is successful they will get orders for many thousands of them.

Harry and J. D. Buxton, former potters of East Liverpool, Ohio, have taken up the building of a $40,000 pottery at Sebring, Ohio; $30,000 of which has already been pledged. The plant will employ 200 people.

R. Godowsky has purchased the old Macomb Pottery property on North Lafayette St., to be used for a storage and secondhand store and a place to store junk. The plant was owned by the Western Stoneware Co.

The stockholders of the Shenango Pottery Co., at New Castle, Pa., are to sell $39,000 more of stock and the plant will then be started at full blast. A big government order to keep the plant going was received some time ago.

Willis H. Hankins who has been superintendent of Plant 4 of the Western Stoneware Co., at Macomb, Ill., has resigned and accepted a better offer with a pottery company at Coffeyville, Kan. The new plant is larger and better all around.

The new pottery at Lamberton, N. J., is expected to be ready for operation in March. The plant consists of 4 buildings: one 2½ stories high and 100 feet long, another of the same length, the engine and boiler rooms and the kiln sheds, all will be entirely fire proof.

Hall and Meakin of East Liverpool, Ohio, have definitely decided to build a ten kiln pottery at Bartlesville, Okla. It will be the first general oven pottery to be built west of the Mississippi river and was secured by the Commercial Club of Bartlesville.

The Wheeling (W. Va.) Potteries Co., recently elected new officers, who are, A. A. Wheat, president; B. W. Patterson, vice president, and A. M. Schenk, secretary and treasurer. The company will be reorganized, if so, it will be with an entirely new set of officers and new management.

SAND OR LIME BRICK OR BLOCK NEWS

The Marysville (Cali.) Sand, Cement, Brick & Block Co. will make extensive improvements to their plant at the foot of B street.

The Ohio Artificial Stone & Brick Co., Hamilton, Ohio, has been incorporated with $150,000 capital stock by N. G. Thompson and others.

Job and James Erickson will build a cement tile factory at Tampico, Ill., near the baseball grounds and will make all sizes of concrete tile.

The Columbia Silica Co., Portage, Wis., is to have a sand-lime brick plant to manufacture 200,000 brick daily. The plant will employ 20 to 25 men.

Work has been started on the new $15,000 sand-lime brick plant for the Gary (Ind.) Granite Brick Co., located at Highland, Ind. The company have purchased 10 acres of land and will employ 100 men.

MISCELLANEOUS ITEMS

The Evansdale Lime & Clay Co., Canton, Ohio, has been incorporated with $20,000 capital stock.

A. Everts, Green River, Utah, has purchased a site for a brick yard and will make building brick.

Miller Bros., Bellingham, Wash., are doubling the capacity of their works on account of the outlook for the Spring trade.

The West Texas Tile Co., Big Springs, Texas, has been incorporated with $2,400 capital stock by E. R., S. D., and M. Bainbridge.

The Union (Mo.) Brick Co. has bought the brick plant of D. W. Cisson of Bowling Green, Mo., and will move the machinery to Union.

The Martinsville (Ind.) Brick Co. has been incorporated with $50,000 capital stock, by Irvin G. Poston, E. I. Poston and W. S. Poston.

At a recent meeting of the directors of the Table Rock (Nebr.) Brick & Clay Co., Louis C. Schure was elected to be superintendent and manager.

The Redfield (Iowa) Brick & Tile Works are spending $10,000 inproving the brick and tile plant, a new power plant, kilns and dryers will be installed.

The Commercial Club of Wellington, Kansas, is working for a brick making plant and President Gambrill assures the citizens that they will soon have a brick plant.

Henry Swint, A. A. Nichols and Theo. Fuchs, Jr., have purchased the A. A. Reynolds Tile Works at Fremont, Ohio, and will enlarge the plant and operate same.

The Commercial Club of Lewistown, Mont., have had samples of brick made from their clays and indications are that a large brick manufacturing plant will be put up there in a short time.

Bowdoinham, Maine, citizens are pleased at the prospects of the developing the clay deposits there. A New York concern has bonded three pieces of property and tests show clay 40 feet in depth.

A movement is on foot to re-organize the company known as the Rockford (Ill.) Brick Co. The plant is at Brown's Creek seven miles up the river. If $15,000 can be subscribed for stock the re-organization will take place.

On account of the large increase in business, the Los Angeles (Cali.) Pressed Brick Co. have been compelled to secure larger quarters and are now on the 4th floor of the Frost Building, corner of Second and Broadway.

The Garfield Cement Mfg. Co., Wallington, Bergen Co., N. Y., has been incorporated with $200,000 capital stock to make white Portland cement. Incorporators: C. Mau, of Verona; H. S. Crossman, of Brooklyn, and H. Mielck, of New York City.

The Watsontown (Pa.) Brick & Clay Products Co. completed in December and are now running a 100,000 daily capacity brick plant. The work was under the direct supervision of Thomas M. Wilson, president of the Wilson Kiln & Dryer Co. of Philadelphia. It has the latest improved Wilson square down-draft kilns and hot air tunnel dryers.

West Concord (Minn.) is to have a brick and tile factory. The machinery has been purchased at Butterfield and is being removed at the present time.

It is stated that a new stock company will be formed to buy the Harbison-Walker brick plant at South Webster, Ohio. W. E. Tripp is one of the promoters.

The Barron (Wis.) Red Pressed Brick Co. has been incorporated with $10,000 capital stock by E. A. Bockman, W. J. Gillett, G. A. Koerner and F. A. Hurbert.

The Brazil (Ind.) Factory Promoting Club has closed a deal for the locating of a plant to manufacture clay machinery. The company will come from Adrian, Mich.

The plant of the American Clay Products Co., Roanoke, Ill., is being enlarged, new kilns are being built and the drying sheds remodeled so as to start work again in March.

The Devonshire Brick Co. office in Columbus, Ohio, and plant at Roseville will spend $50,000 in doubling the capacity of the plant so as to keep up with demands for its products.

The Empire Brick Co., Alamogordo, N. Mex., has been incorporated with $50,000 capital stock. Incorporators are M. H. Fisher, C. S. Foust and Albert Carter. They wil lmake 20,000 brick daily.

At the annual meeting of the Ashland (Ky.) Fire Brick Co., W. B. Seaton was elected president; Charles Russell, vice-president; E. H. Gartrell, secretary and general manager, and H. D. Savage, treasurer and sales manager.

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. **NEW YORK CITY**

The Ridgeway (Pa.) Brick Co. has been sold to Fiske & Co., of Boston, Mass.

W. J. Green of Ferris, Texas, is figuring on the establishing of a brick making plant at Weatherford.

John Dilier has sold his interest in the brick plant at Decatur, Ill., and moved to Texas where he has a ranch.

C. A. Lanius has submitted a proposition to the Business Men's Club of Abilene, Texas, to establish a $20,000 brick plant there; same was accepted.

Fred Plagman will install at once a brick plant at Waurika, Okla., that will employ 20 men the year around. The plant will be in the Talley addition.

A. Armstrong, of Farmersburg, Ind., has sold his brick and tile factory to Bert Wood, Fred Lash, Ollie Curry and Samuel Birlingmier, who have taken charge.

The Miller City (O.) Tile Co. has been incorporated with $10,000 capital stock by J. F. Brinker, Minor Beardsley, L. P. Maxwell, Viola Temple and Mary A. Beardsley.

The Blue Blanket Valley Brick Co., Mobridge, S. Dak., has been incorporated with $30,000 capital stock. The company expect to manufacture brick, tile and hollow blocks.

Oliver St. Germain has sold one-half interest in his brick yard at Havre, Mont., to August Coullard of St. Paul, and will purchase additional machinery so as to keep up with demands.

The Winfield (Texas) Pottery & Fire Brick Co. has been incorporated with $30,000 capital stock by C. O. Tide, T. B. Caldwell, H. W. Peterman, R. F. Lindsay and S. P. Pounders.

The Red River Valley Brick Corporation, Grand Forks, N. Dak., will add a steam shovel to one of its plants, also machinery to make hollow brick and tile. A. I. Hunter is the manager.

The entire capital stock of the Humboldt (Tenn.) Brick & Tile Co. has been bought by L. E. Rooks owner of the L. E. Rooks Lumber Co. He will run it in connection with his lumber business.

The Rapid City (S. Dak.) Brick & Tile Works will purchase additional machinery for their works. V. T. Price and Guy Marshall recently made a trip inspecting drain tile and sewer-pipe plants.

The Tuscarawas Brick & Clay Co., Massillon, Ohio, has been incorporated with $100,000 capital stock by Samuel L. Douglas, Herman Leoffler, R. R. Leoffler, R. C. Choate, J. E. Leoffler, and L. B. Douglas.

The Kaolin & Clay Products Co. has been incorporated with $500,000 capital stock at Augusta, Maine. President, Roy Matthews, of Tisbury, Mass.; treasurer, S. A. Wilbur, of Boston, Mass. The company will operate valuable clay beds at Makonikey, Martha's Vineyard, Mass.

The Bomberger Brick Works, Lancaster, Pa., has been organized and bought the brick works of Henry Bomberger. They will replace the old machinery with new improved and put in a modern steam brick dryer. The members of the new company are William Bomberger, Rose Bomberger, H. P. Martin and J. F. Martin.

The Moberly (Mo.) Brick, Tile & Earthenware Co. has been closed down for three weeks so as to install additional machinery.

The Minnaugh Dry Press Brick Co., of Mt. Vernon, Ill., is reported to establish a plant at Durant, Okla., to make brick and tile.

The Blakeley (Minn.) Brick Works has been bought by Sam Kahn. The capacity will be greatly increased and the plant operated by him.

A company has been formed to develop the beds of clay adjoining Traverse City, Mich. Capital to the extent of $65,000 has been subscribed.

W. W. Whitehead and L. H. Wells have formed a partnership and will open up a brick yard at Alamosa, Colo., as soon as the weather will permit.

The stockholders of the Nebraska City (Neb.) Brick Co. elected J. M. Huberle president, J. W. Butt, vice-president, and F. J. Homeyer, secretary treasurer.

The Basin (Wyoming) Commercial Club are having shale tested, taken from the bad lands adjacent to town, with a view of manufacturing vitrified brick.

The Alabama Brick & Tile Co., Hollywood, Ala., has been incorporated with $5,000 capital stock by E. J. Neher, W. B. Brewster, W. J. Matthews and others.

The Kushequa (Pa.) Brick Co. is doubling the capacity of their plant with new machinery which is being installed. The capacity of the works will be 100,000 brick daily.

The Brookfield (Mo.) Paving Brick Co. changed hands twice this month. Geo. H. Paul & Co., of Iowa were the owners and now it is owned by S. P. Hartman and Phil Hartman.

T. F. Hook, of Webster City, Iowa, and associates have recently purchased the rock crushing plant at Mexia, Texas, and are considering the building of a large drain tile and sewer pipe plant at Dallas, Texas.

The Pawhuska (Okla.) Brick Co. has been incorporated with $30,000 capital stock. The plant will be up-to-date and make 50,000 brick daily. J. M. Parkins of Humboldt, Kansas, is one of the stockholders.

The Red River Valley Brick Corporation, Grand Forks, N.D., will put in machinery for making hollow blocks. A. T. Hunter has just been re-elected president and manager. A purchase of 40 acres of land now leased by the company will be made.

The Columbia (S. C.) Granite Brick Co. has been organized with $200,000 capital stock. The officers are F. H. Hyatt, president, B. H. Moss of Orangeburg, vice president, and J. H. Bollin, of Columbia, secretary and treasurer. They expect to make vitrified brick.

The Alberta Clay Products Co., St. Paul, Minn., has been incorporated with $50,000 capital stock. Incorporators are: M. E. Newell, Ft. Dodge, Ia.; Warren Overpack, Webster City, Ia.; Geo. W. Limbet, Hopkins, Minn.; Edward W. Stanwood, Chicago; Daniel F. Muhlenbruch, Edward C. Knapp and W. Markham, of St. Paul, Minn. The plant will be built at Medicine Hat, Alberta.

CASH

For your Real Estate or Business. No matter where located if you want te buy, sell or exchange any kind of business or real estate anywhere at any price, call on or or, address,

FRANK P. CLEVELAND
1725 Adams Express Building,
Chicago, Ill.

HELP WANTED

Wanted, a competent foreman for the kiln end of a drain-tile plant employing 75 men. Must be able to do the burning with common-labor helpers.

Foreman, care Clay Record,
Chicago, Ill.

HUDSON RIVER BRICK PLANT

Will lease on easy terms a fully equipped two machine soft mud brick plant, large open yard. Immense bank of clay and sand. Dock frontage on deep water adjoining railroad. Houses, barn, kiln sheds, Engine & Boiler, etc. etc.

Address RICK
Clay Record Chicago, Ills.

WANTED

A 25M capacity belt delivery, side cut table. Must be ready to do perfect work. No time to exchange letters—be frank, write exact conditions, make, how long used. Is it ready to do first-class work? Best cash price.

We are also wanting a disintegrator. Address
J. T. FOLSOM, Boonville, Ind.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

FOR SALE

One right-hand disc fan, complete with shafts and bearings.

One Atlas Engine, automatic, right-hand. 100 horse-power; used only two years. Address
Kankakee Brick and Tile Co,
Kankakee, Ill.

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction. kiln building, and handling all classes of labor. A1 references. Address B 4
Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

Two, Three and Four-Mold Presses. Stiff mud auger machine. Pug mill and cutter. One pulverizer and one mixer. Two small engines. Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address
Southern Brick & Tile Co.
Louisville, Ky.

MACHINERY WANTED

I am in the market for the purchase of 12 cylinders, 6 ft. 2 in. in diameter by 40 feet long; also a large number of hardening cylinder brick cars.

Address COLBY M. AVERY, Aurora, Ill.

FOR SALE
SECOND HAND MACHINERY

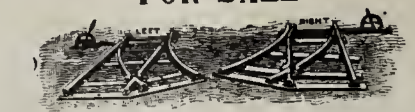
Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2⅛ in. to 1½
One McGowan & Co. 6 in. to 6 in.
One Blake 6 in to 6 in.
One Erie Engine 75 h. p.
One No. 7 Dean 4in. to 6 in.
One Blake 3 in. to 4 in.
Two Cameron 3 in. to 4 in.

Three Centrifugal pumps 4½ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in. Buffulo Force Fans. One Stutervant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill One No, 2 and No 3 Mead Mill. Four 32 in. and one 42 in. Munson Mills.

The above machinery has been used only a short time.

S. KRUG WRECKING CO.
Nebraska City, Neb.

FOR SALE



Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

BRICK MACHINERY FOR SALE CHEAP

One—125 H. P. Atlas Engine.
Two—80 H. P. Atlas Boilers.
One-9 foot Raymond Dry Pan.
One—No. 77 Raymond Brick Machine.
One—Raymond Rotary Cutting Table.
One—10-ft Raymond Pug Mill.
One—2 Cylinder Steam Hoist.
104—Steel Frame Dryer Cars with iron pallets.
Two—Transfer Cars, six tons, 12 lb. rails.

Five acres of good brck shale and cheap natural gas. Good reasons for selling.

Address: P. O. Box 206
Iola, Kansas

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Bensing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32,000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12,000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address
J. M. CRABILL,
Clarenda, Iowa.

FOR SALE OR LEASE

Good soft mud brick plant in city of 10,000 in Indiana; capacity 25,000. Will be sold at a bargain on easy terms; good reasons for selling. Aydress
R 5, care Clay Record,
Chicago, Ill.

FOR SALE

A Wellington Brick Machine, two-horse power, soft mud. Also 3000 or 4000 brick pallets. Address
August Chevraux,
Louisville, Ohio

WANTED

Experienced brick setters and shaders. Steady employment. Give experience and reference, also wages expected.

J. A. Topping,
95 1st Avenue Columbus, Ohio

WANTED

Second-hand, two or four-mold dry-press brick machine. State condition, where located, and lowest cash price; also name of manufactuerer, when beught, and amount of brick made or how long used. Address
Dry Press:
care Clay Record, Chicago, Ill.

CLAY AND COAL FOR SALE OR LEASE

Have 1,500 acres of the celebrated Carter Co. fire clay and coal land to sell very reasonable or lease on royalty. Three veins of fire clay and one three and one-half foot of coal in same hills at Denton, Ky., on line of two railroads.

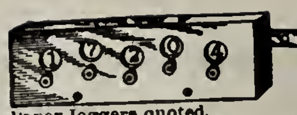
Fine prospect for oil and gas.

Address: J. H. BURDETTE,
622 West Caster Ave.,
Ashland. Ky.

BOOK WANTED

Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

Book, care Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers.

Paper Joggers quoted.
R. A. HART. 41 White St., BATTLE CREEK. MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machihe; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address
Redfield Brick and Tile Works,
Redfield, Iowa.

INVEST IN PRESSED BRICK AND TILE PLANT

In Hope, Arkansas, where we have four railroads in operation and two other lines building.

Hope is ninety-three feet higher than the city of Little Rock, has a population of 5.303 and is steadily growing. We have good health and the finest of water

Abundance of shale on St. L. I. M. & S. Ry., in edge of Hope; I have samples of brick to show test of shale, though you should come and test it yourself if interested.

Good mud brick plant here but no other clay plant of any kind, above is needed, large territory to supply.

Reliable brick maker will invest $2,000.00 and take charge if you wish.

A. P DYKE,
Hope, Arkansas

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio.

Address A. B. care Clay Record,
Chicago, Ill.

FOR SALE

One 9-ft. dry pan, made by the American Clay Machinery Company. This pan is as good as new, having been used only about 60 days. Write for price to
The Alpena Portland Cement Co.,
Alpena, Mich,

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

5000 brick Pallets 10½ by 32 inches, kiln shutters and grate bars Address
Jno. Brill Jr.
2580 Madison Ave.
Indianapolis, Ind.

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana,"
Care Clay Record, Chicago, Ill.

FOR RENT

The Mendota Brick and Tile plant to rent on easy terms. Good home trade and shipping trade over three railroads. Apply at once to
Mrs. Wm. Stare,
Mendota, Ill.

BANKRUPTCY SALE

In the District Court of the United States for the Eastern District of Pennsylvania.

In re Montello Brick Works, bankrupt. In bankruptcy, No. 2922. Pursuant to an order of sale granted by Samuel E. Bertolet, Esq., Referee in Bankruptcy, on May 16, 1908, the undersigned will expose at public sale or auction, on Thursday, **March** 18, 1909, at 10 o'clock a. m., on the premises of the Montello Brick Works at the plant known as the "Oak Factory," at Perkiomen, Upper Providence township, Montgomery County, Pa., the buildings and entire equipment of said "Oak Factory," consisting of 1-600 H. P. Corliss engine; 1-250 H. P. Corliss engine; 1-80 H. P. twin engine; 1-50 H. P. engine; 1-20 H. P. engine; 4 Heine boilers, 250 H. P.; 4-60 H. P. Western Electric Co. dynamos; 4 switchboards; 4 pug mills; 4 Chamber's Brick Machines; 10 dry pans; 14 transfers, 10 turntables; No. 1 kiln; No. 2 kiln; 2-6 ft. fans; 5-7 ft. fans; 1-12 ft. fan; 4-7 ft. blower fans; 1-16 ft. blower; 1 large air compressor; 2 small air compressors; 2 vacuum pumps; 1 fire pump; 1 pulsometer pump; 2 deep well pumps; 5 fuel oil tanks; 2,380 brick cars; 5' 5 tons 30, 40 and 70-lb. steel rails; shafting; hangers; pulleys, elevators; elevator screens; 4, 5, 6, 8, 10 and 12-inch canvas belting; 1½, 2, 2½, 3, 4 6, 8, 10, 12, 24 and 48-inch leather belting; 8, 12, 14 and 20-inch rubber belting; 2 large Marion steam shovels; large amounts of scrap iron and nnmerous other articles composing what is generally conceded to be the best equipped brick plant in the world. This property will be offered as a whole and in parts. Complete catalogue mailed on request.

On Friday, March 19, 1909, at 2 o'clock p. m., at the Wyomissing Plant of the bankrupt, at Wyomissing, Berks Co., Pa., one Thew steam shovel.

Terms: 20 per cent cash on days of sale. Balance to be paid in cash on approval by the Referee of sales.

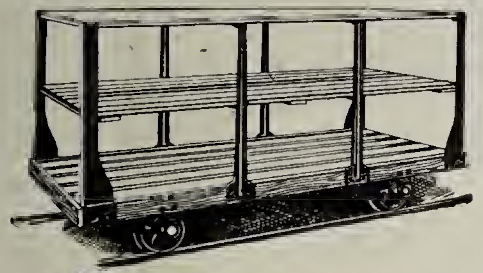
All to be sold as the property of the Montello Brick Works, bankrupt.

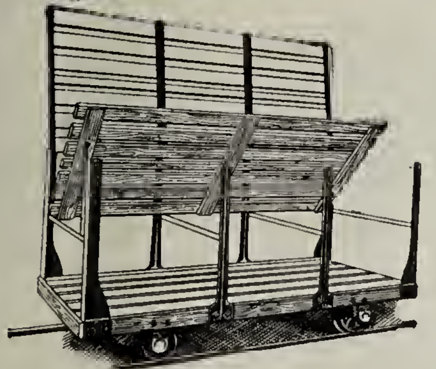
EDWARD D. TREXLER,
Trustee of the Montello Brick Works, bankrupt
25 N Sixth St. Rearing, Pa.

D. Thomas Kunkel, Auctioneer
Harry F. Kentner, Attorney. 25 N. Sixth St., Reading Pa.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





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VON OVEN COMPANY

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Consulting and Contracting Engineers

Gas Producer Installation.
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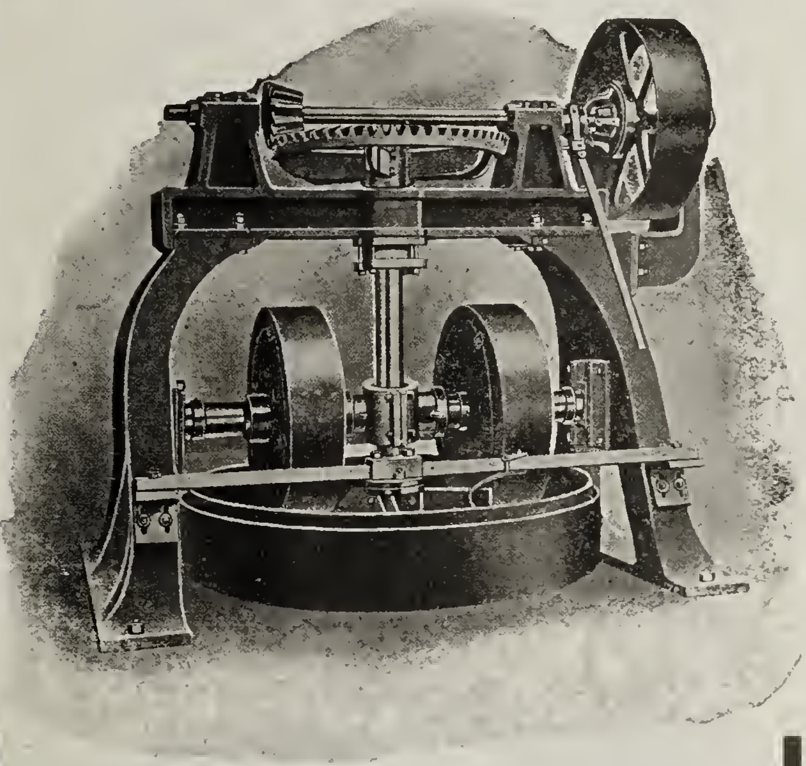

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BUILDERS OF
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ROCK AND ORE CRUSHERS

When writing for prices state kind of material and capacity required.

Eastern Offices
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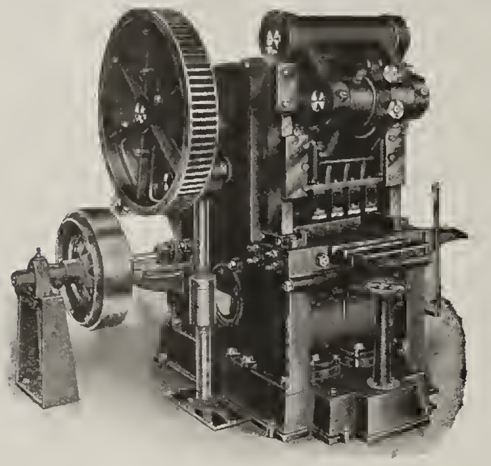
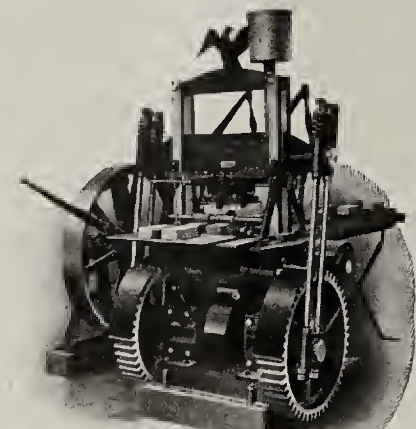
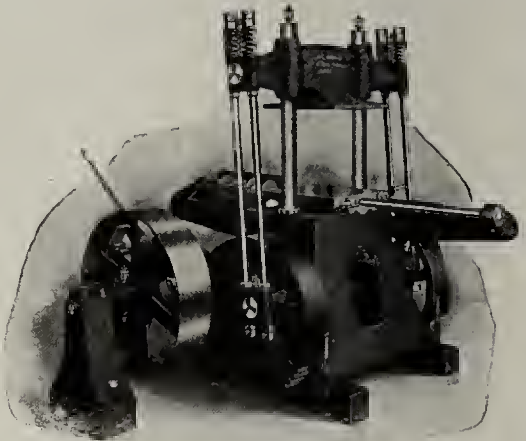
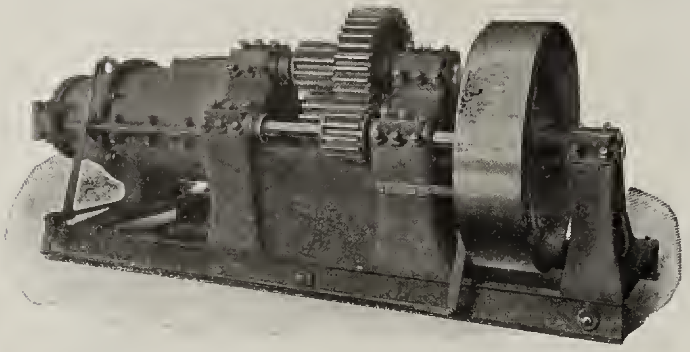
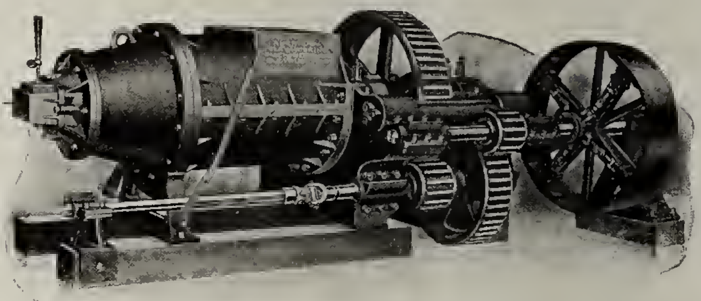
BUCYRUS OHIO, U.S.A.

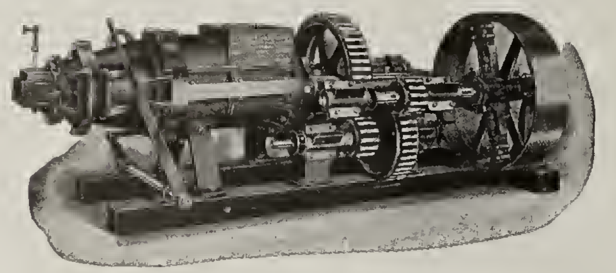

Model "B" Dry Press

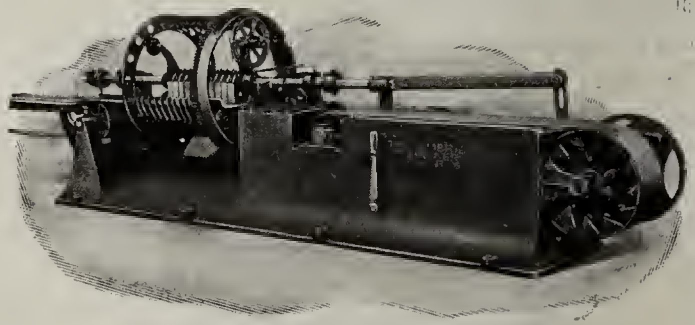

Eagle Repress

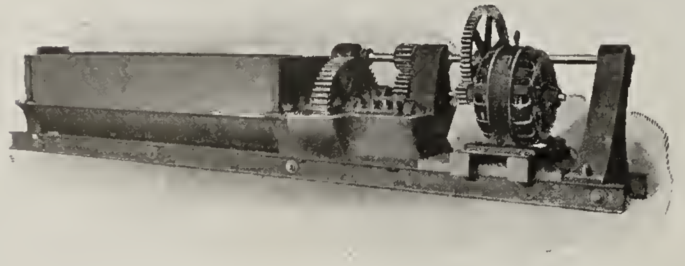

Roofing Tile Press

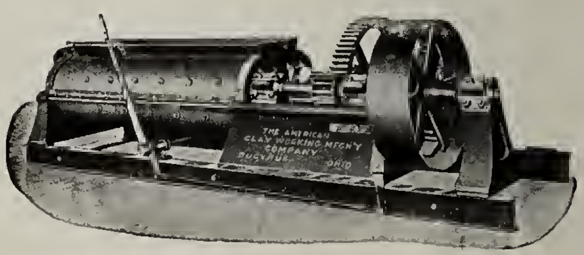

No. 265 Auger Brick Machine


Special Giant Brick Machine


No. 2 Giant Brick Machine


No. 83 Automatic Cutter


No. 51 Electrical Driven Pug Mill



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We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

THE AMERICAN CLAY MACHINERY COMPANY
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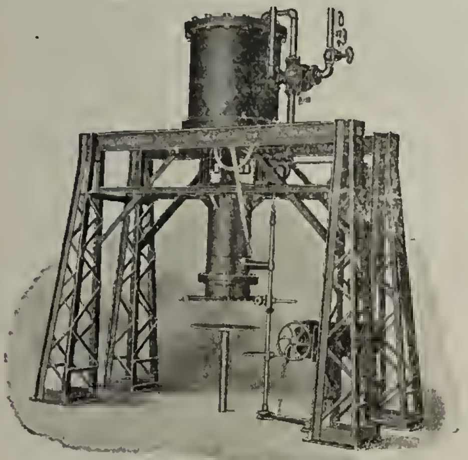
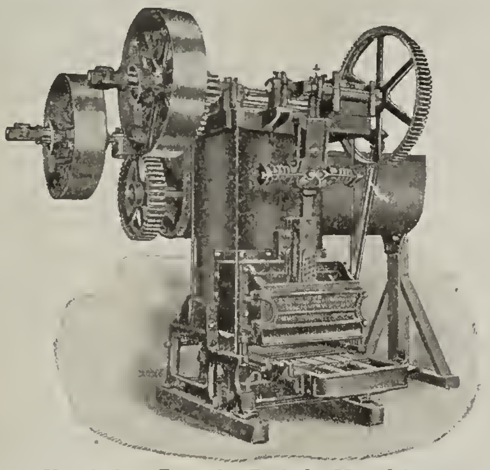
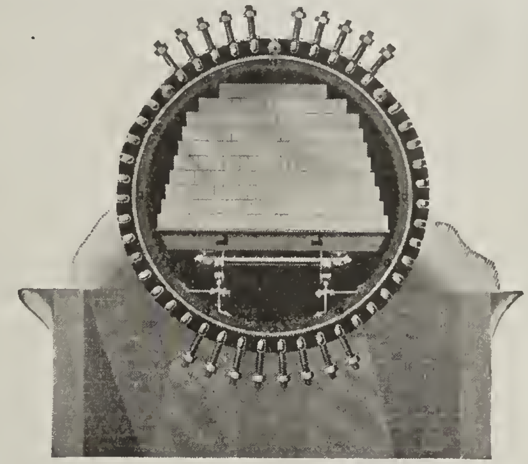


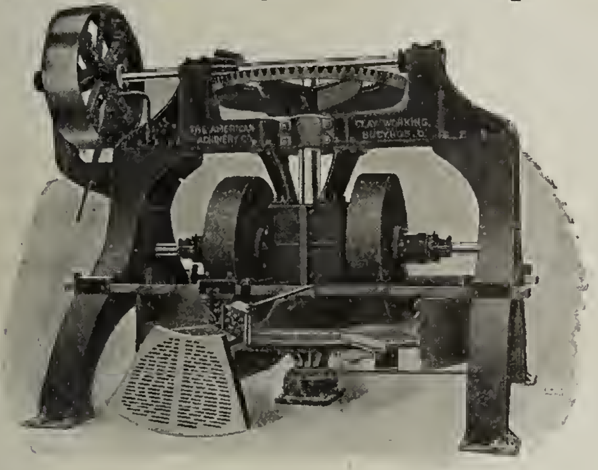
Sewer Pipe Machinery



Upright Stock Brick Machine

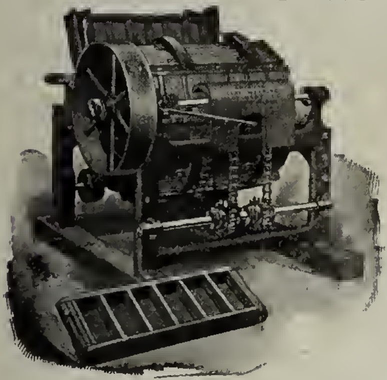


Sand-Lime Brick Machinery

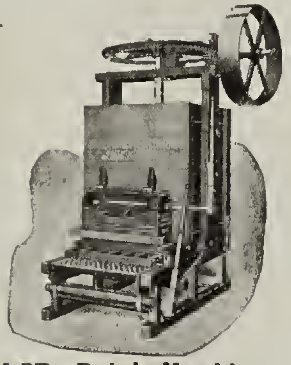


9 Foot Dry Pan

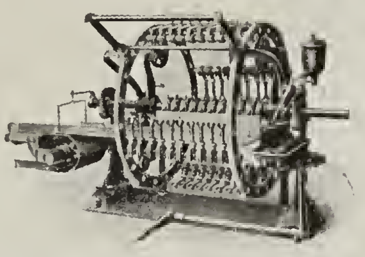
Blower Dryer Apparatus



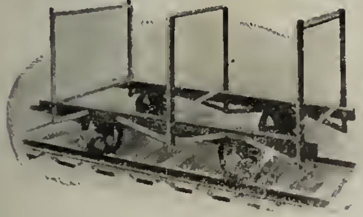
Mold Sander



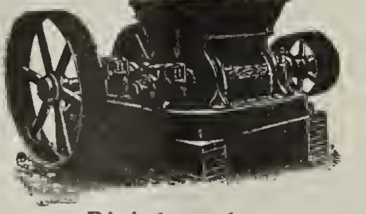
H. P. Brick Machine



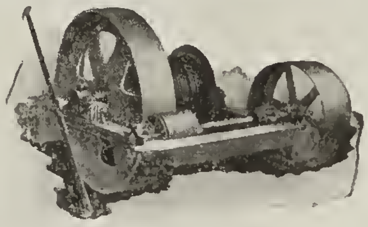
No. 62 Hand Power Cutter



Dry Cars



Disintegrators



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We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.
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NOW READY—A TREATISE ON

PRODUCER-GAS *and* GAS-PRODUCERS

BY AN ACKNOWLEDGED AUTHORITY.

A 300-page book containing thirty chapters, giving the fundamental principles and definitions, calculations, classifications, manufacture and use; the fuel, the requirements, the history, its by-products, **Producer-Gas for firing kilns, steam boilers, and power plants.** The future of the Gas-producer and a bibliography.

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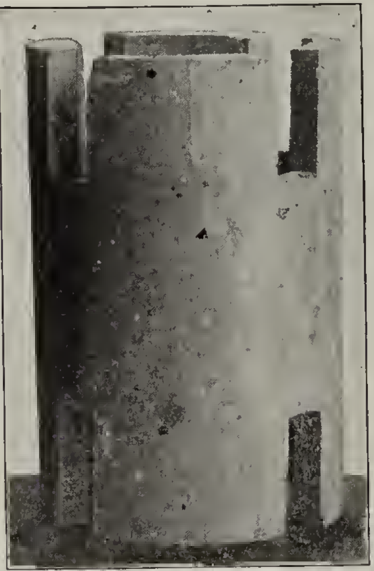

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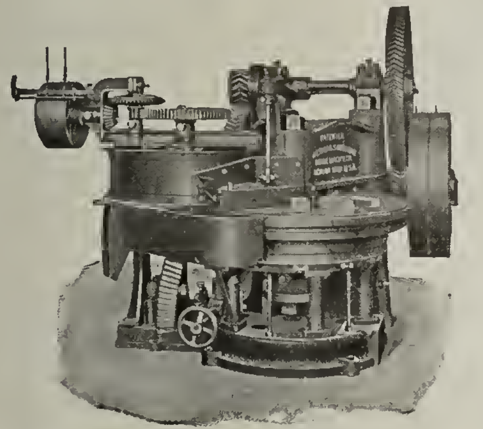

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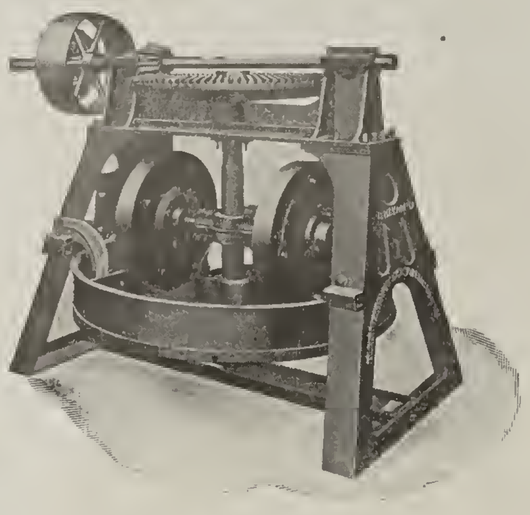

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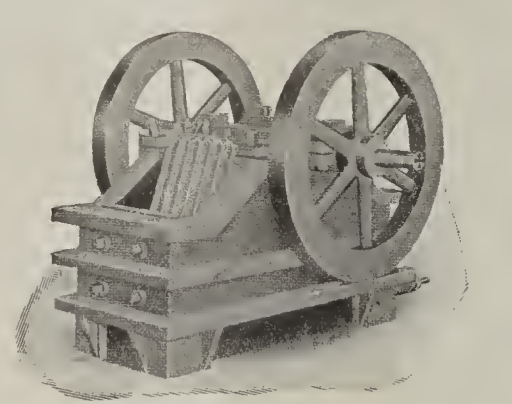

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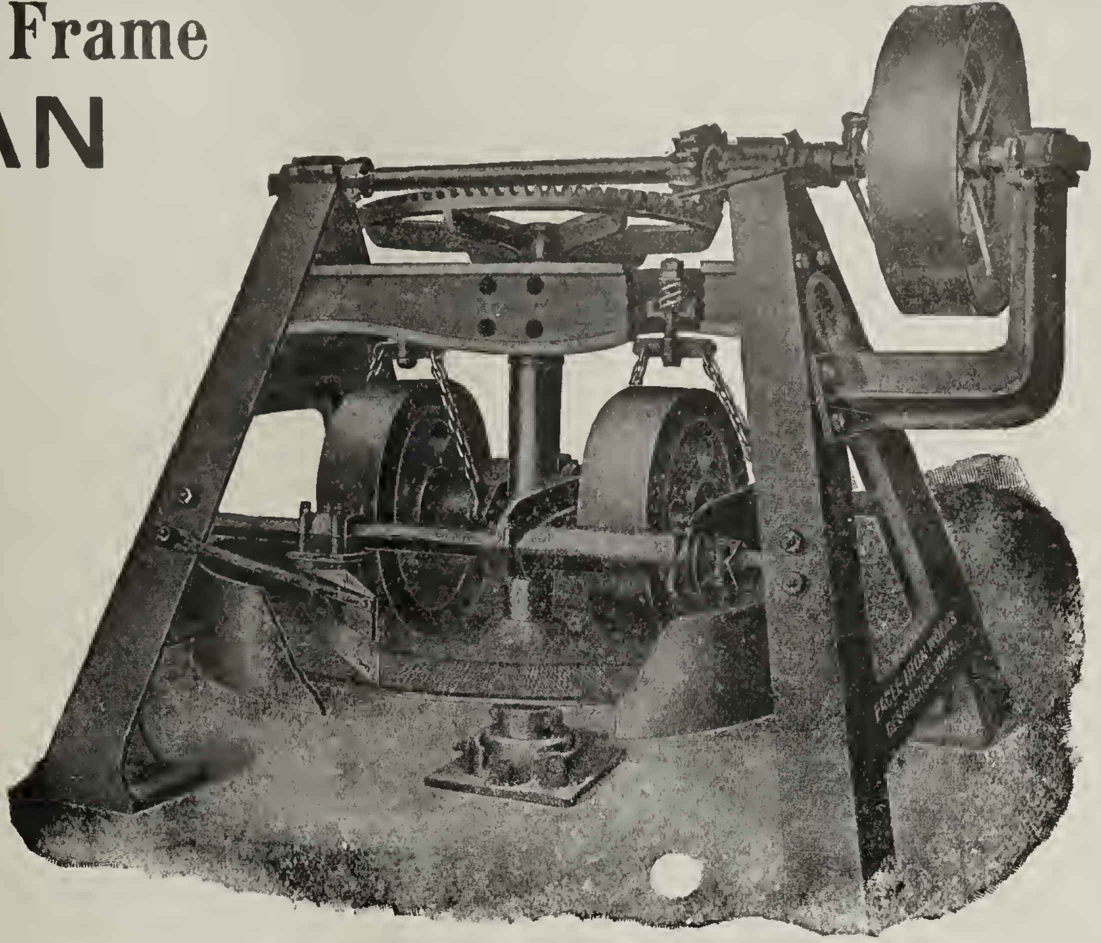

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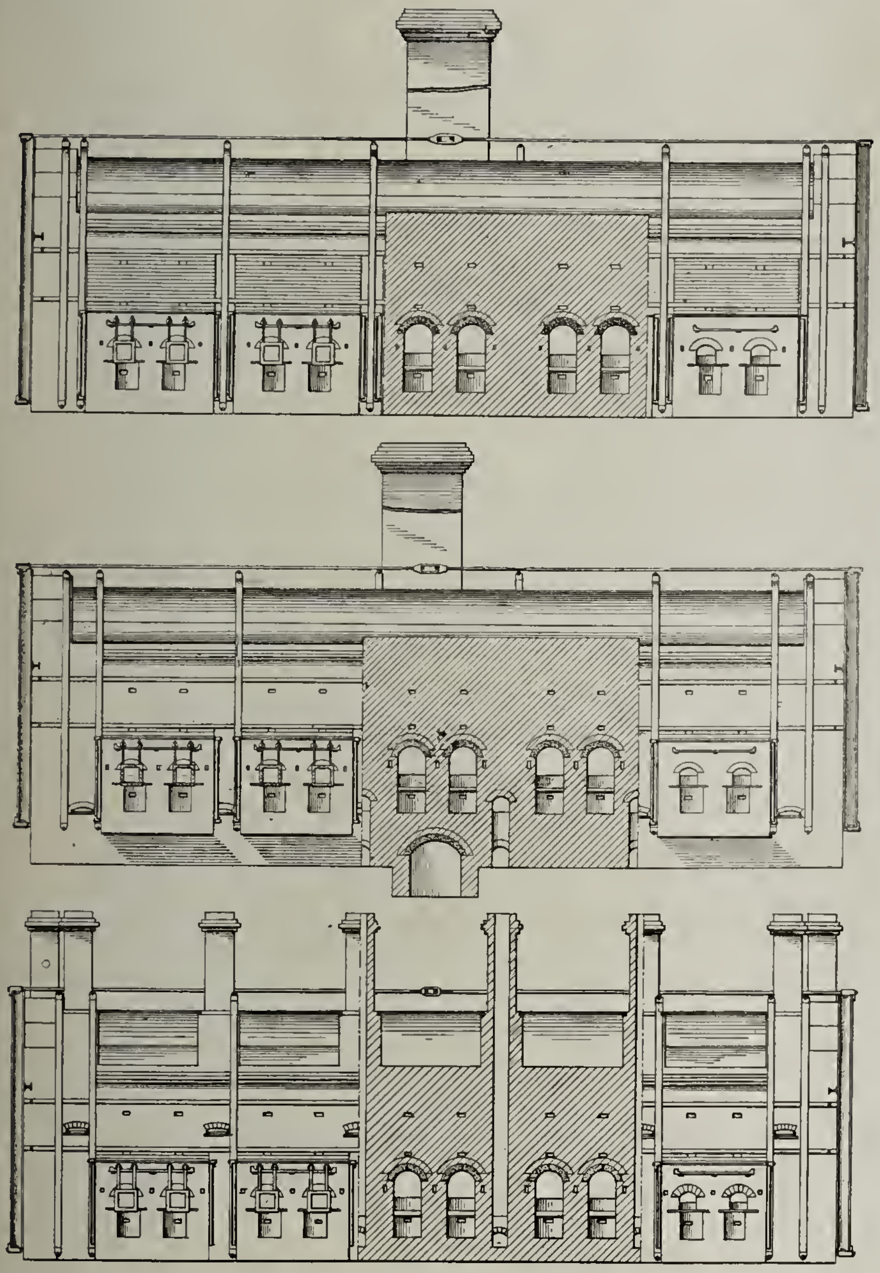
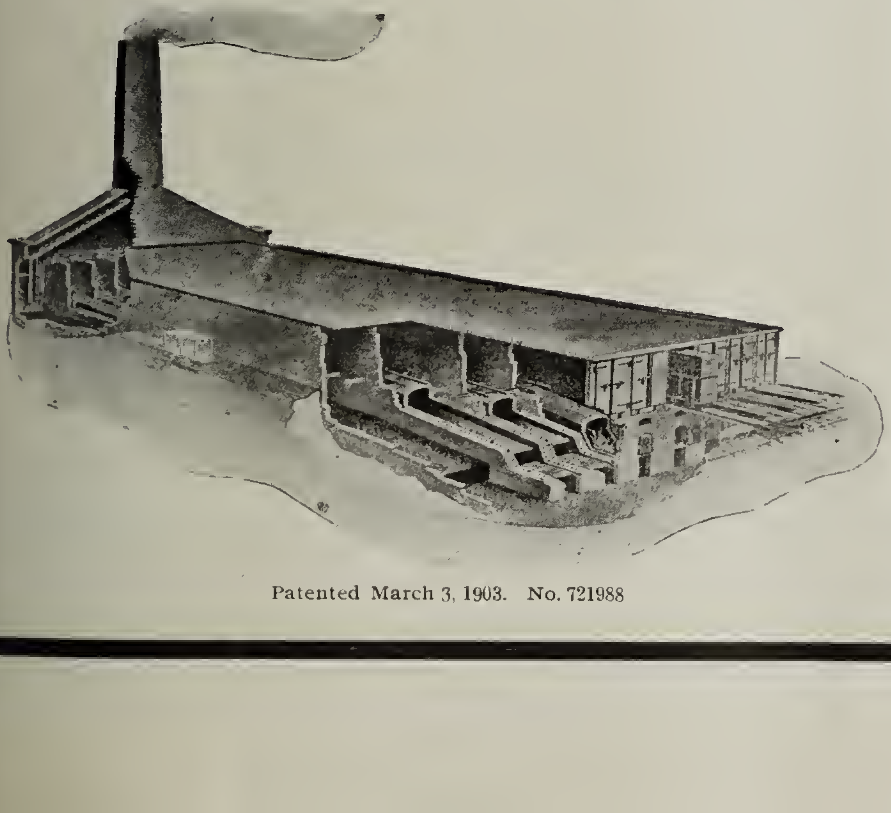


Patented July 8, 1902. No. 704418



Patented March 3, 1903. No. 721988

THOMAS M. WILSON

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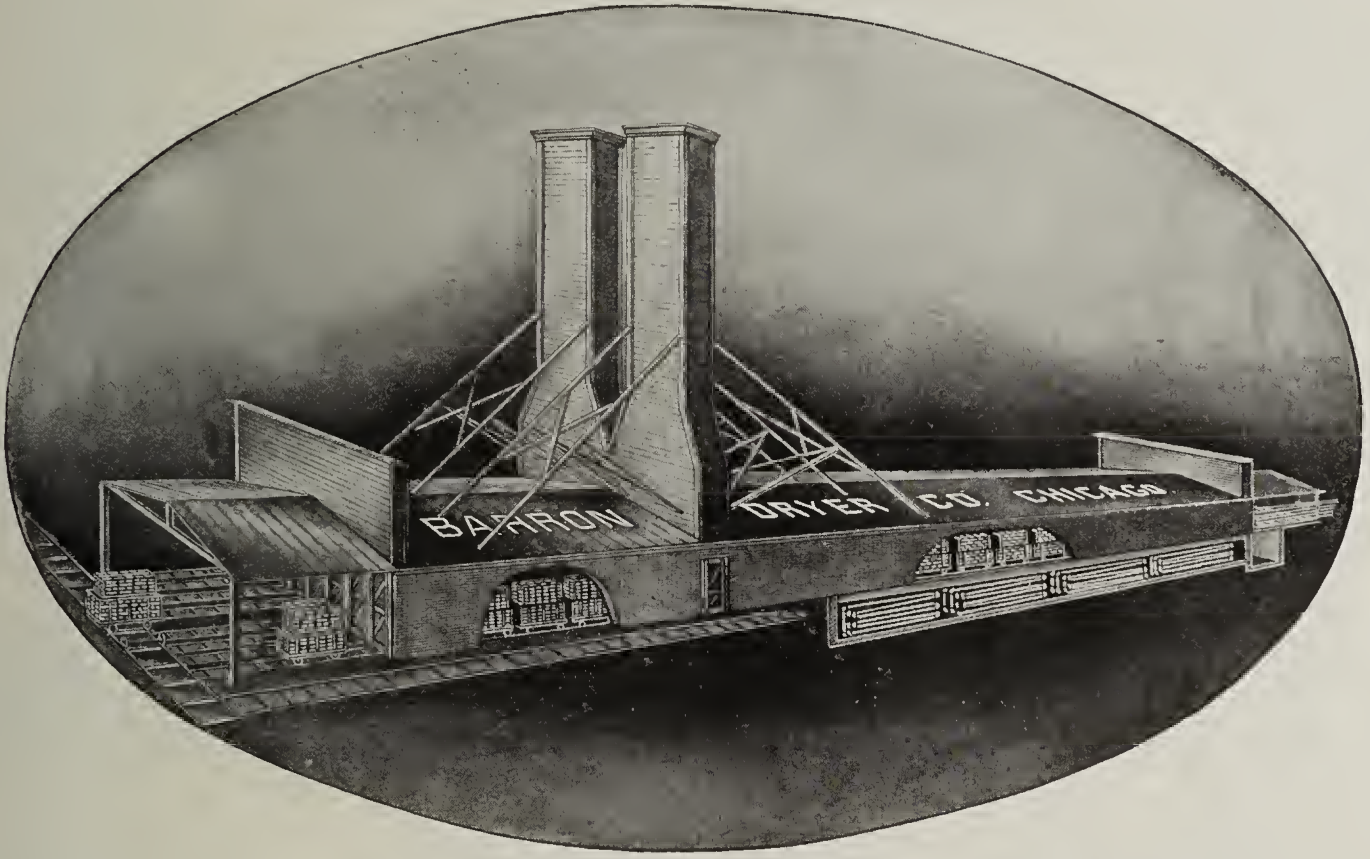

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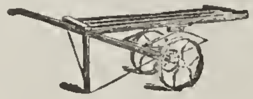

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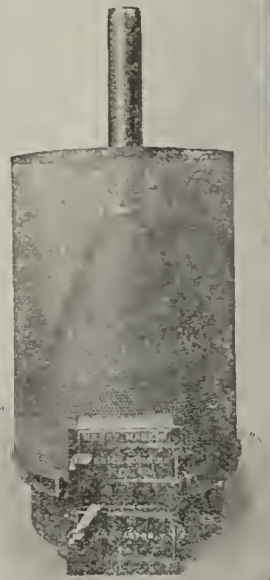

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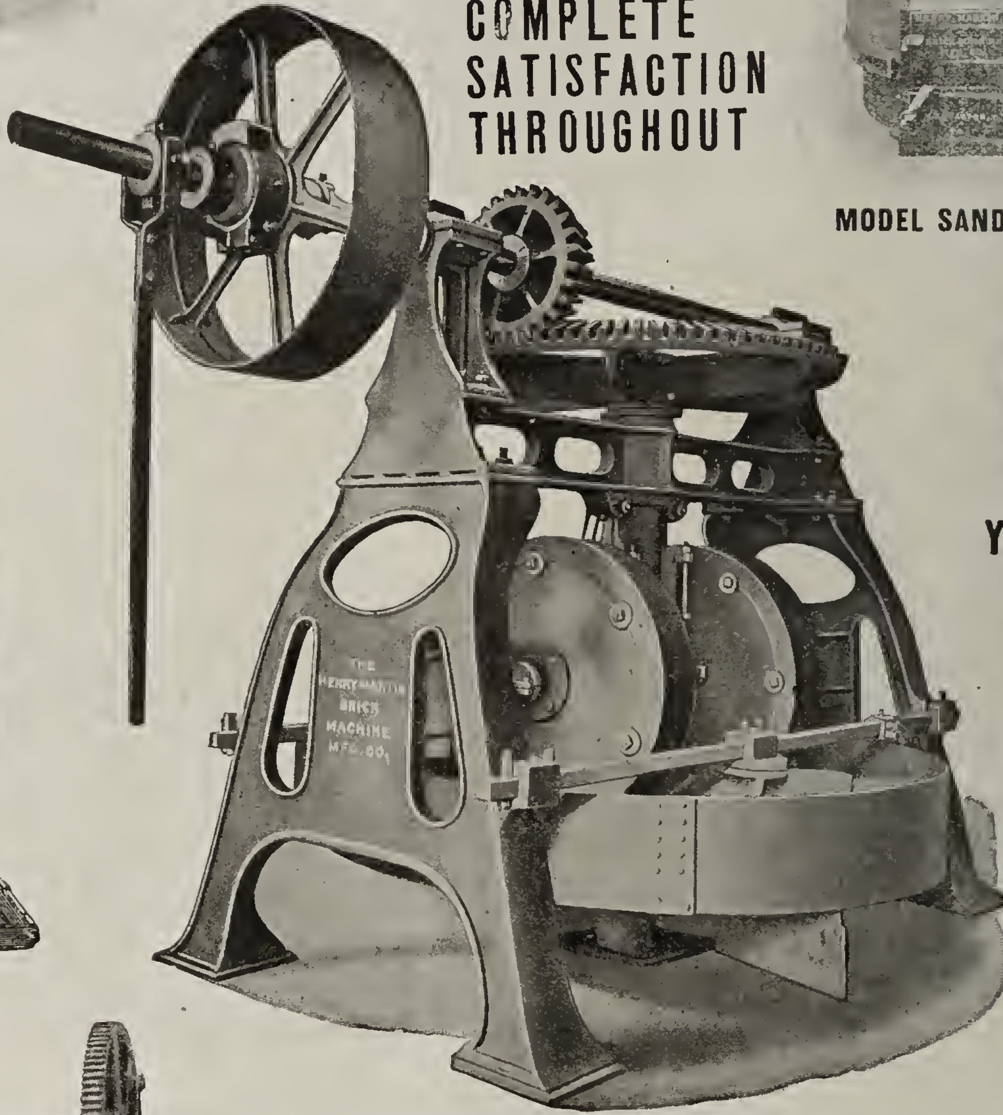

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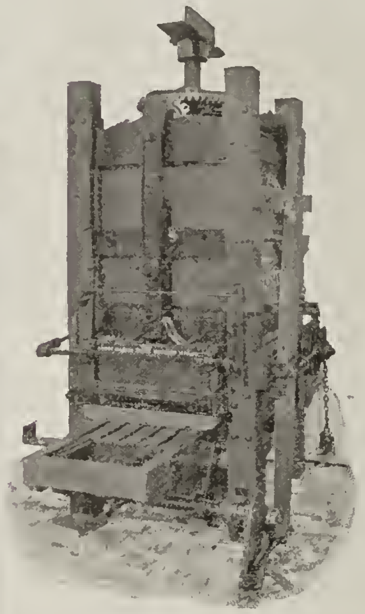

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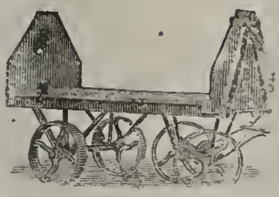

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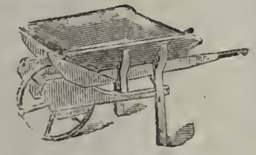

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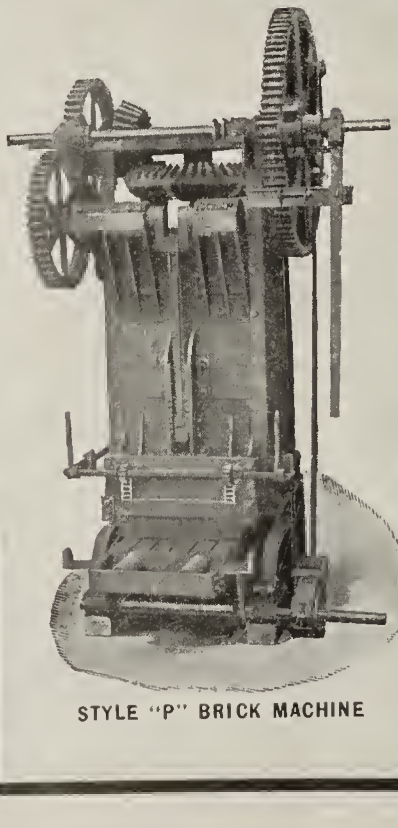

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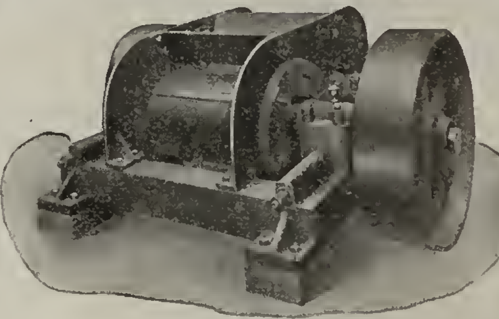

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October 10, 1905. No. 95520
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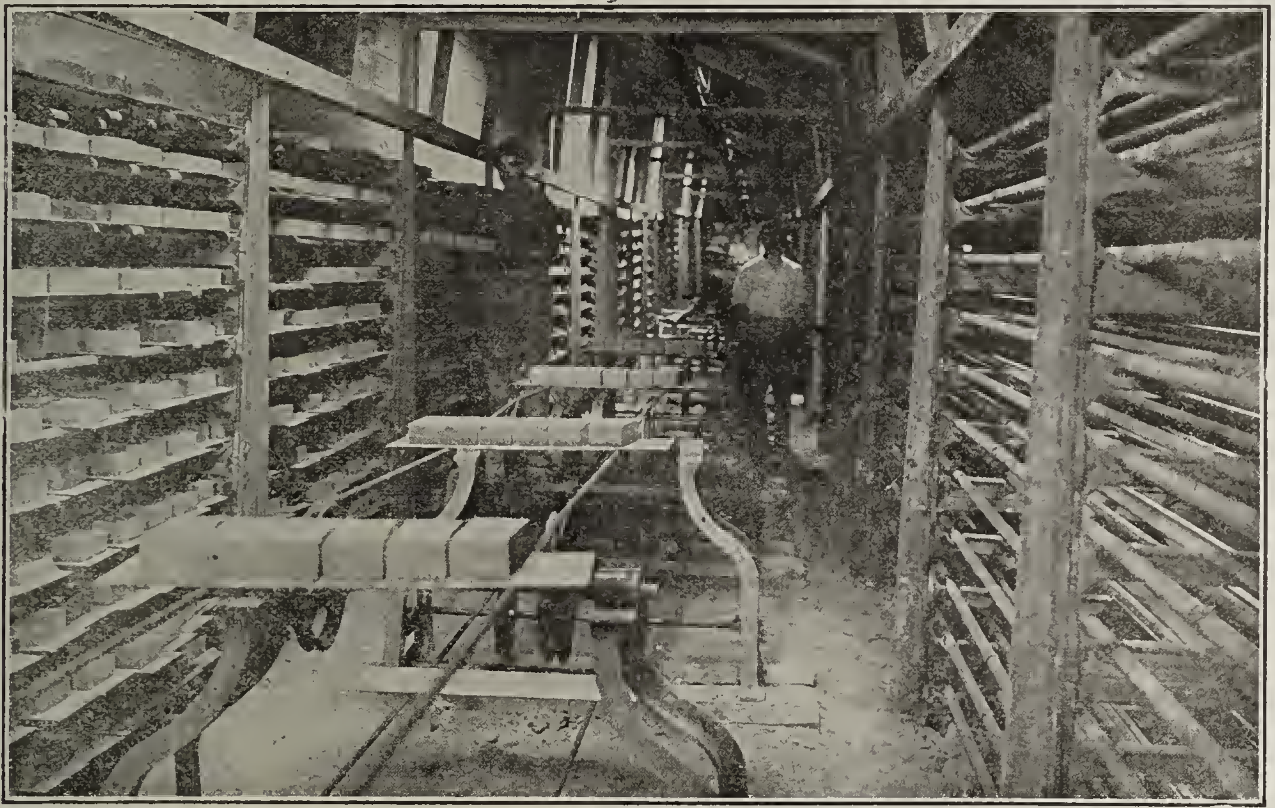

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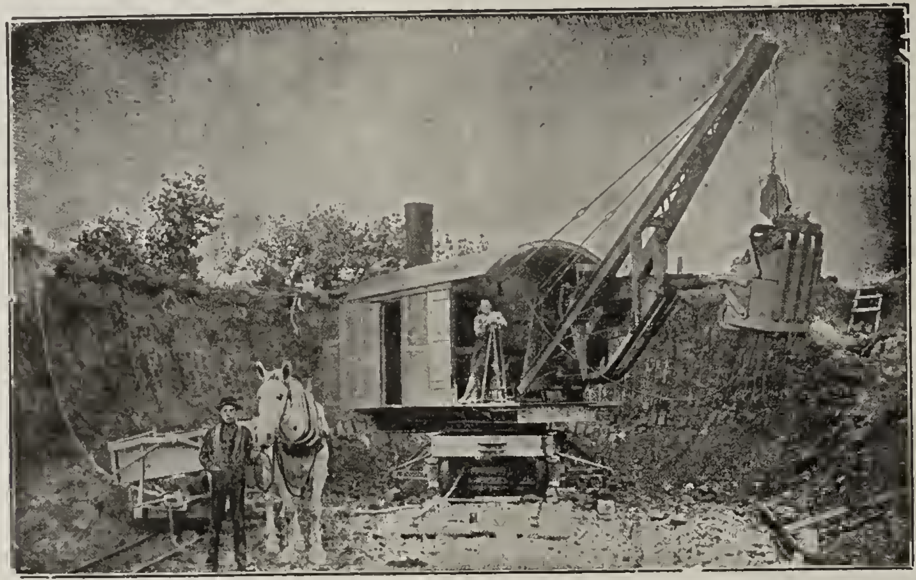

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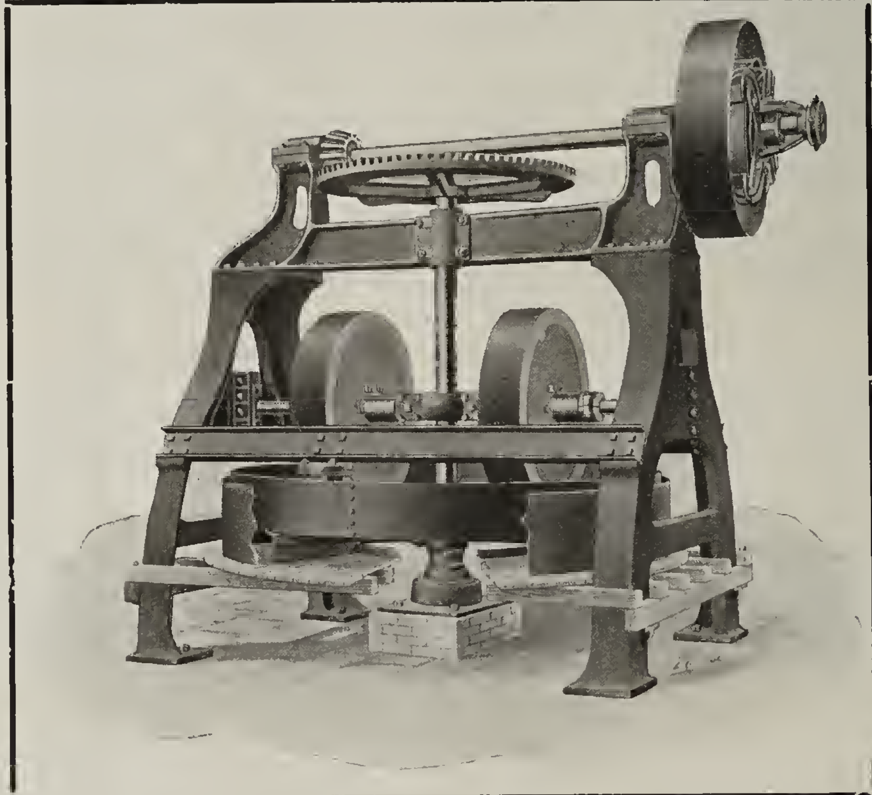

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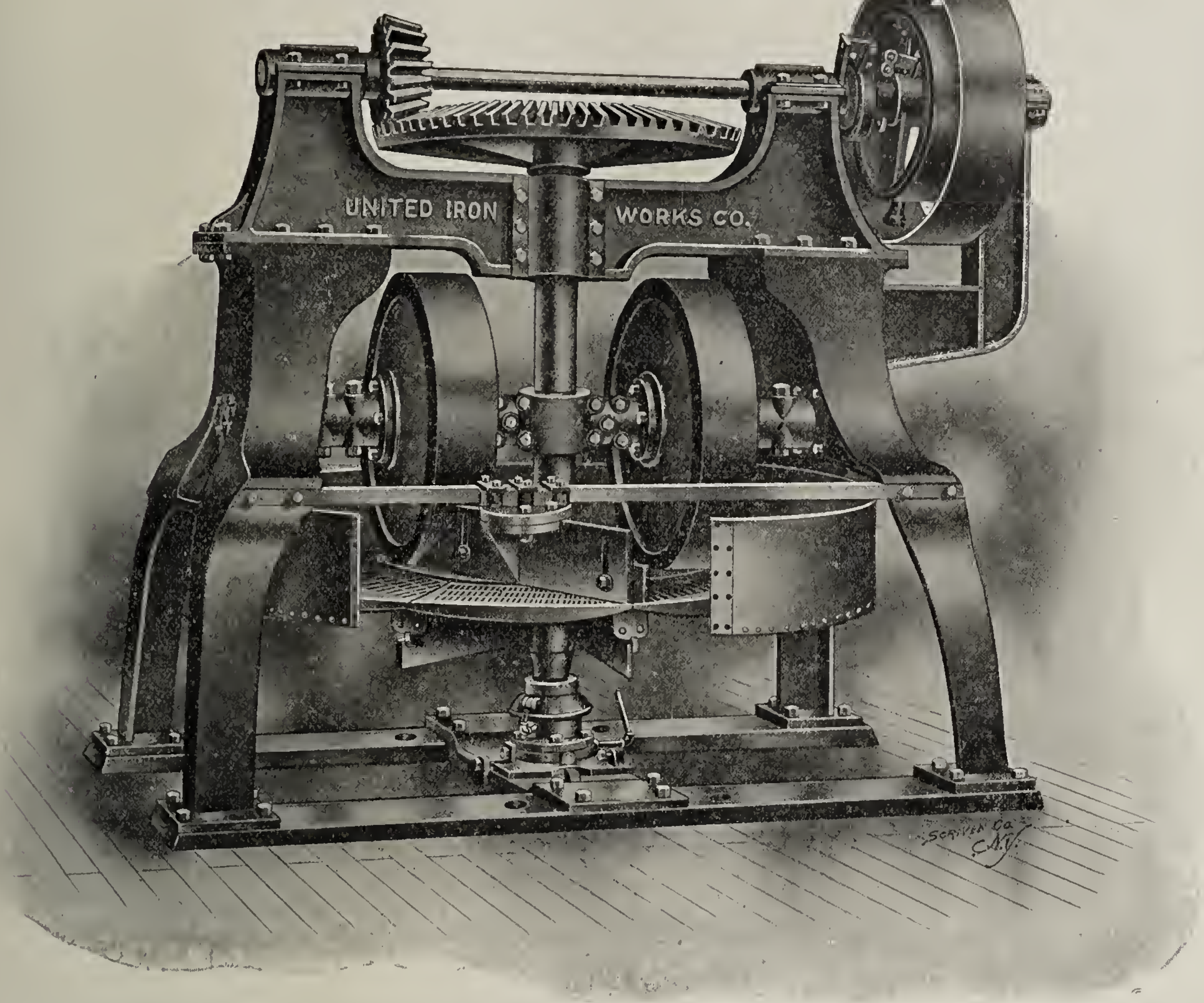
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VOL. 34 No. 5

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
— TO THE —
CLAY ·
· INDUSTRY ·

March 15, 1909

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The Youngren Gas Fired Continuous Kiln

Announcement

We are pleased to announce to the Brick Making World that we have taken over all patents of the late *Peter L. Youngren* of Milwaukee, Wisconsin, covering the *Youngren Gas Fired Continuous Kiln* and all other types of the Youngren Kiln.

The success of this kiln is now most thoroughly established. All who are interested in the installation of the *Youngren Producer Gas, Gas Fired Continuous Kiln* are invited to consult us for particulars regarding construction, operation and contracts of same.

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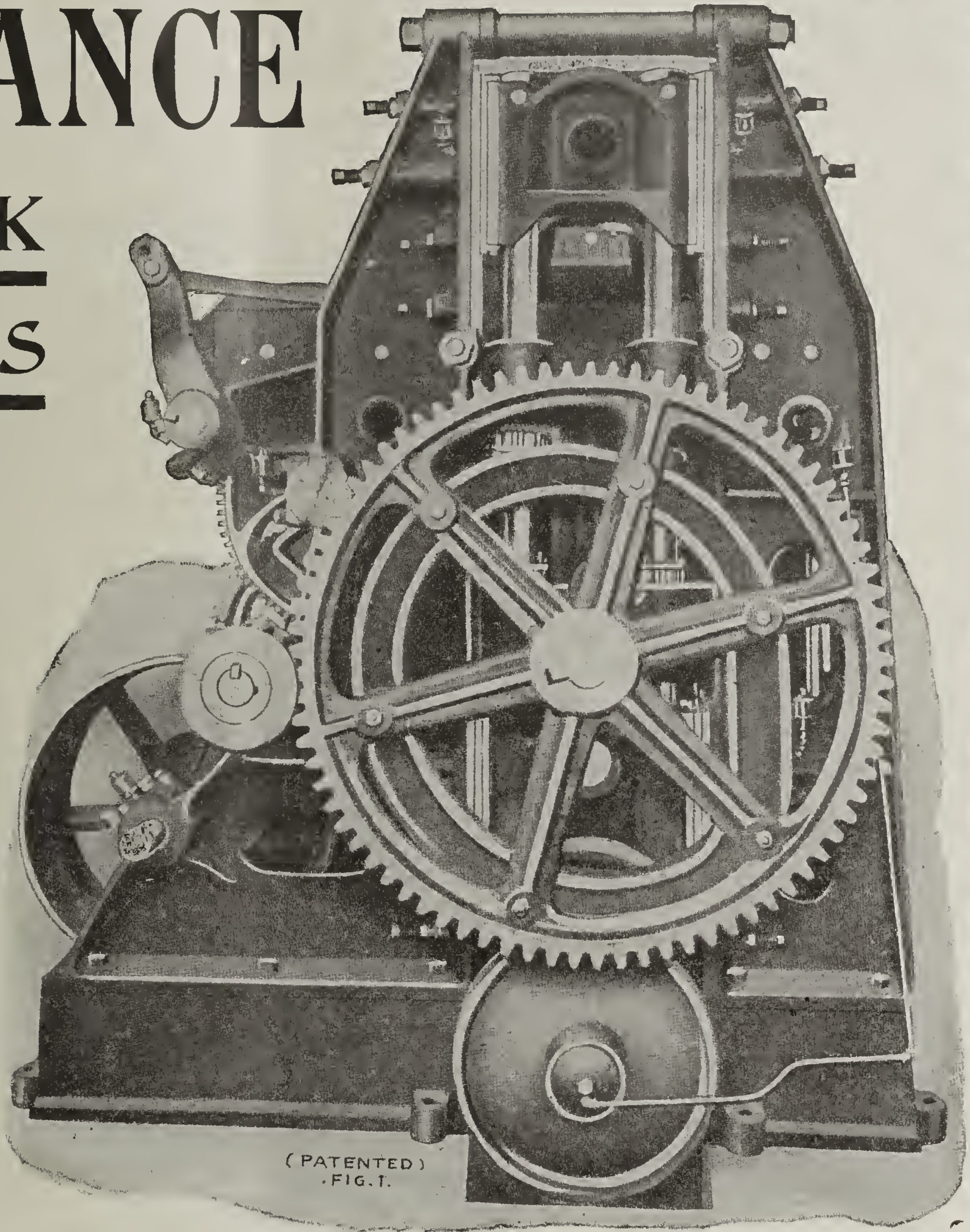

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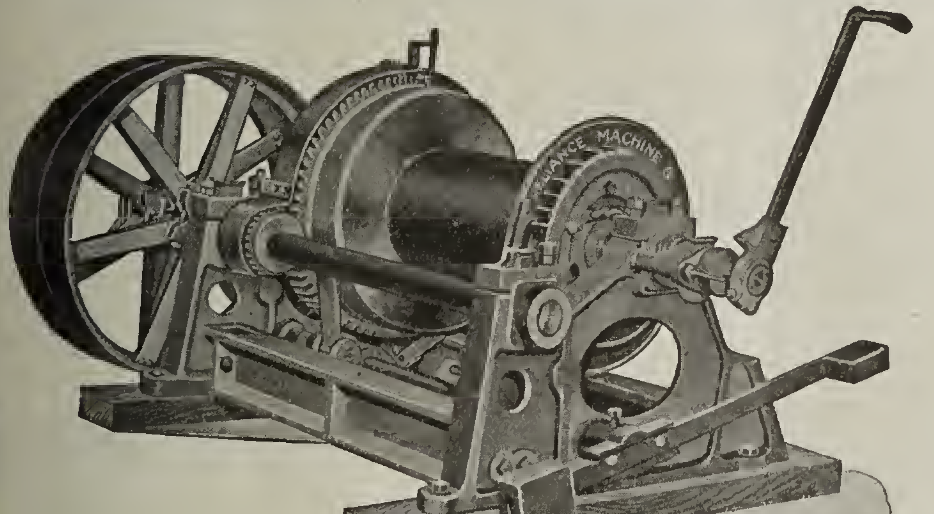

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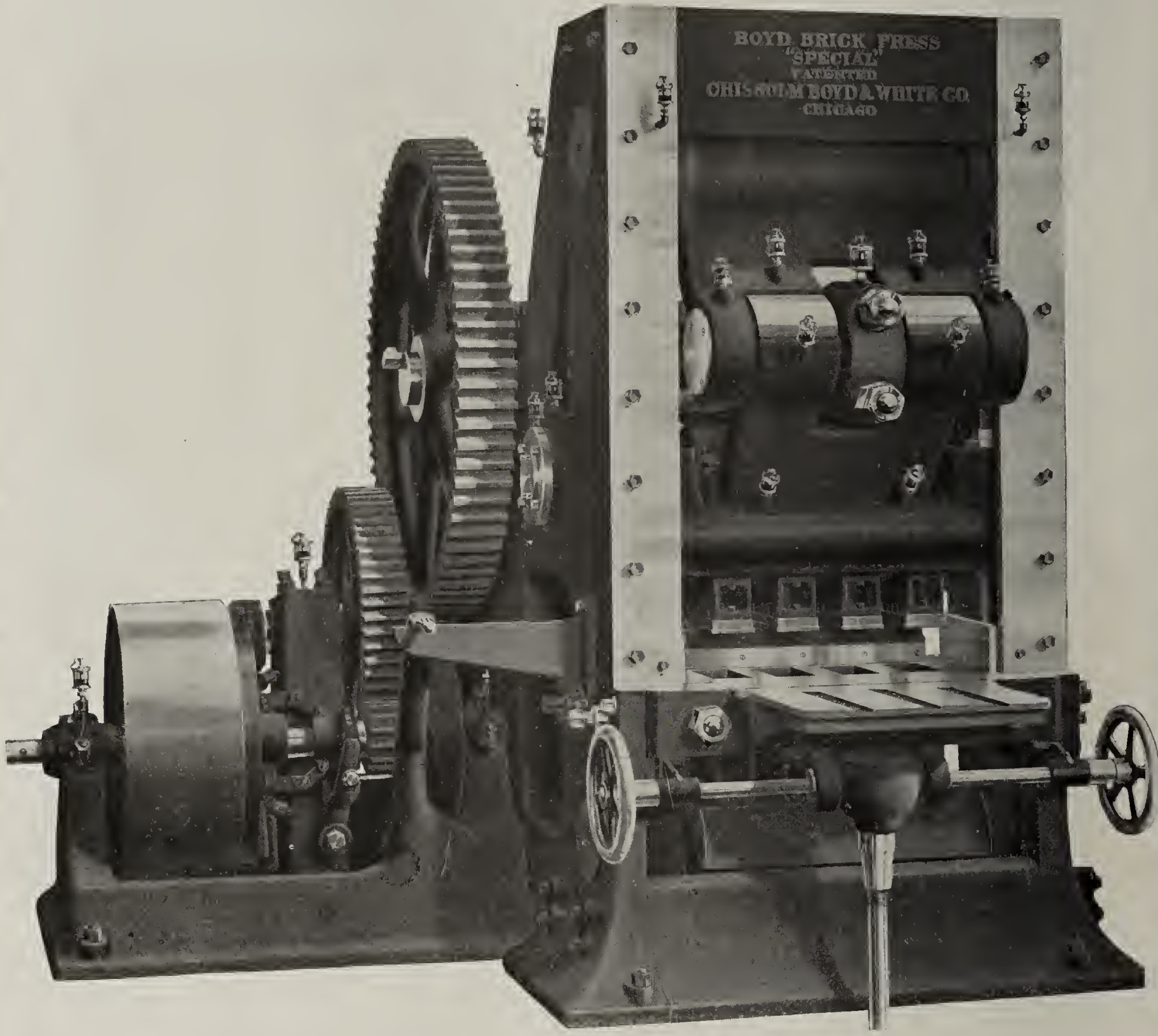

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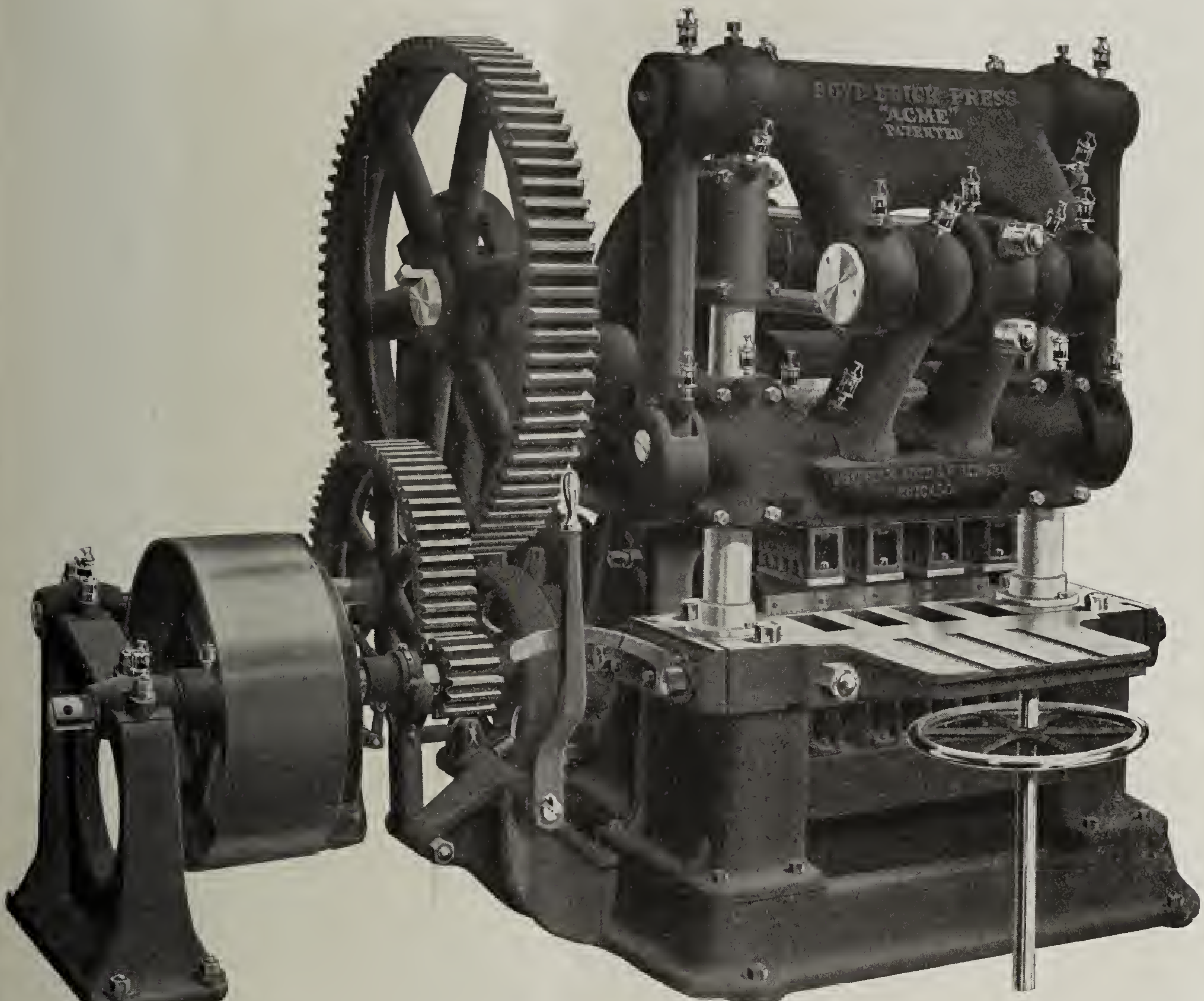

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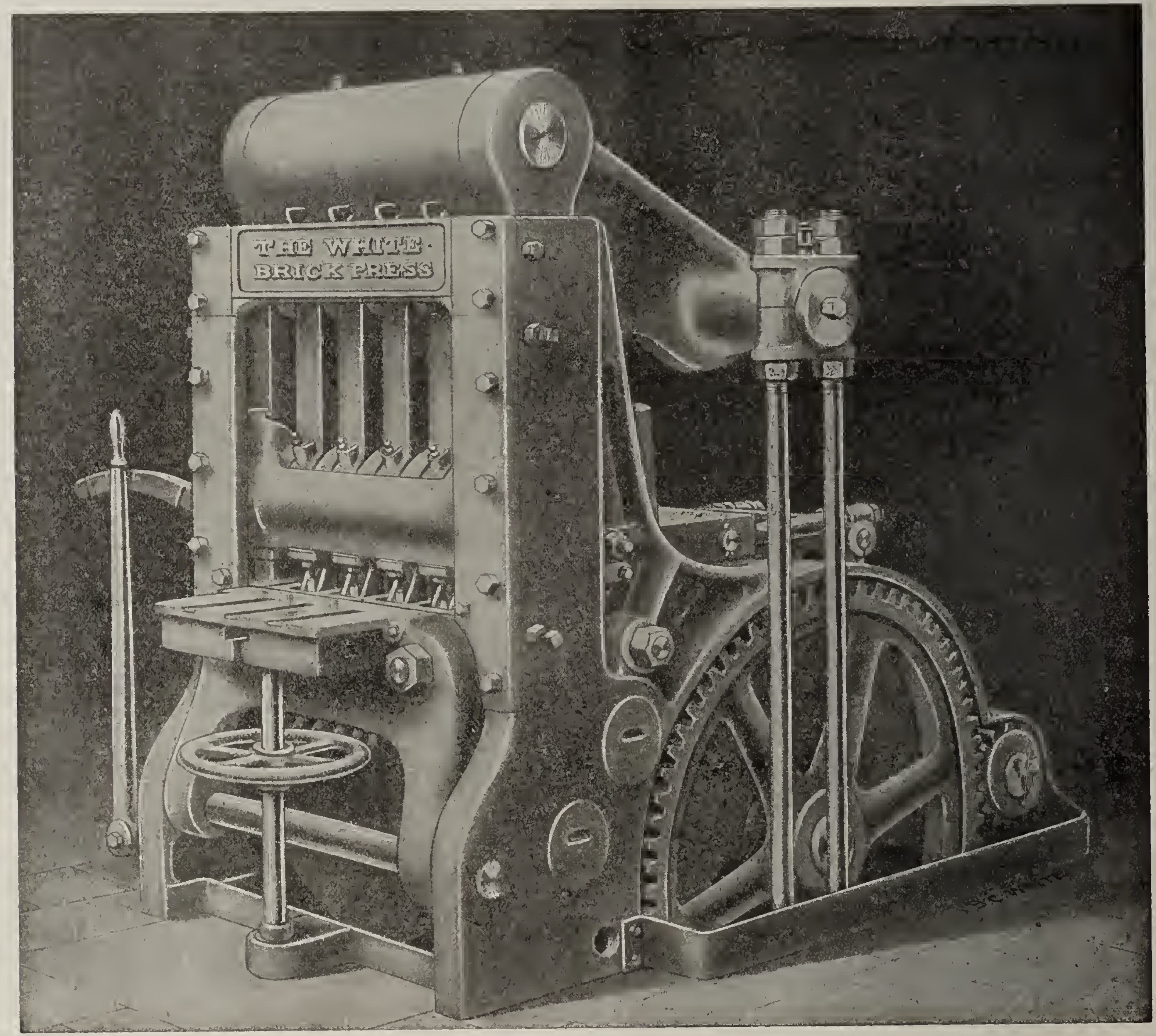

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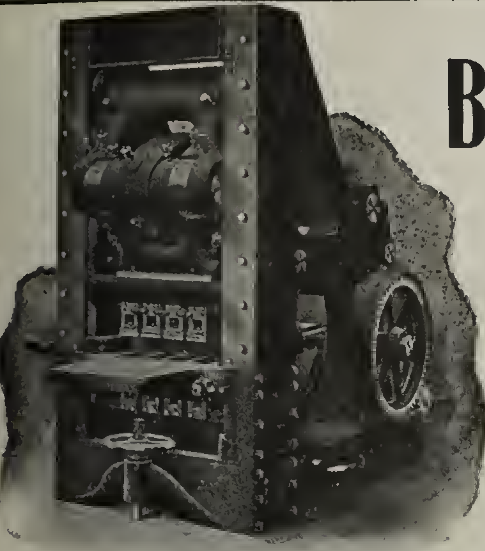

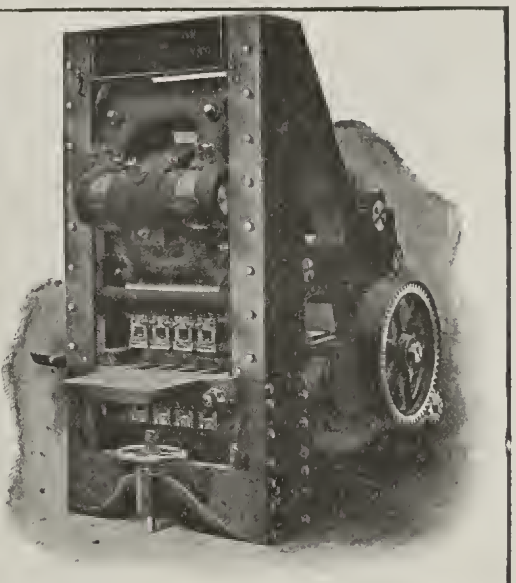

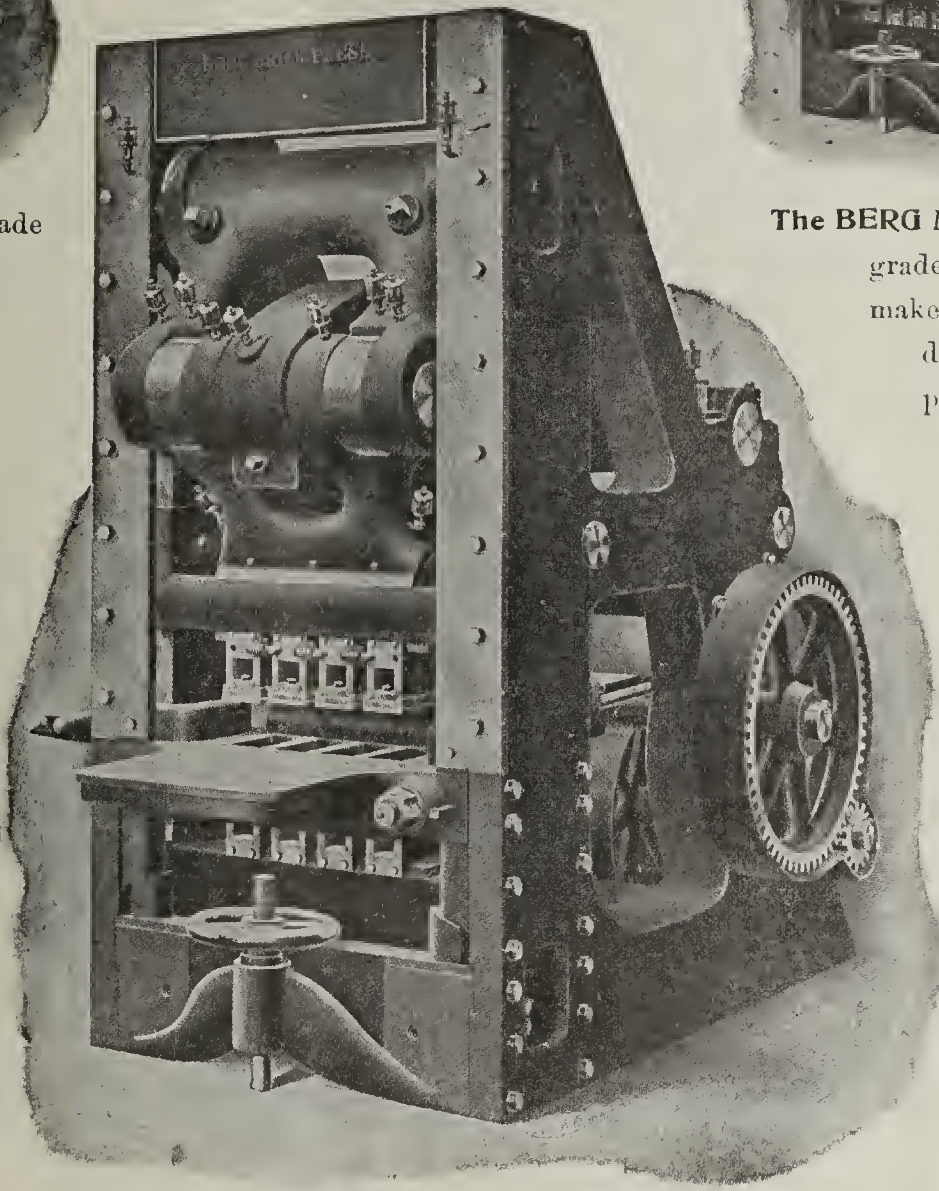

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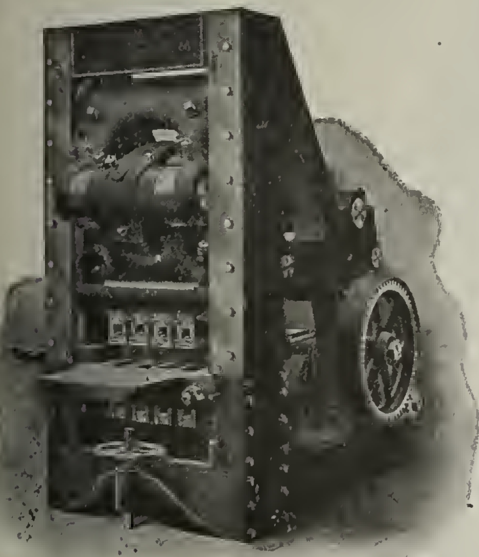

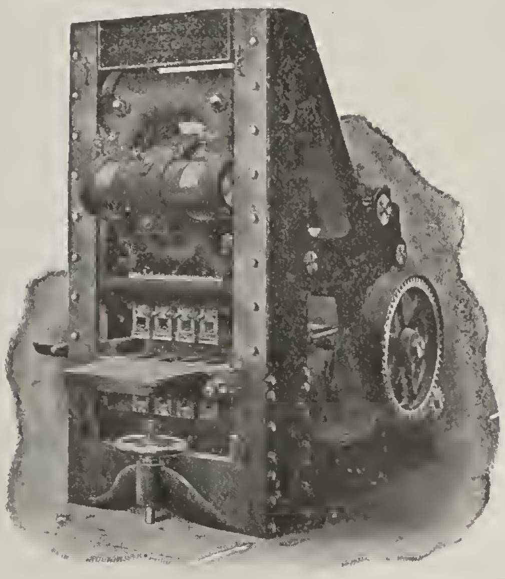

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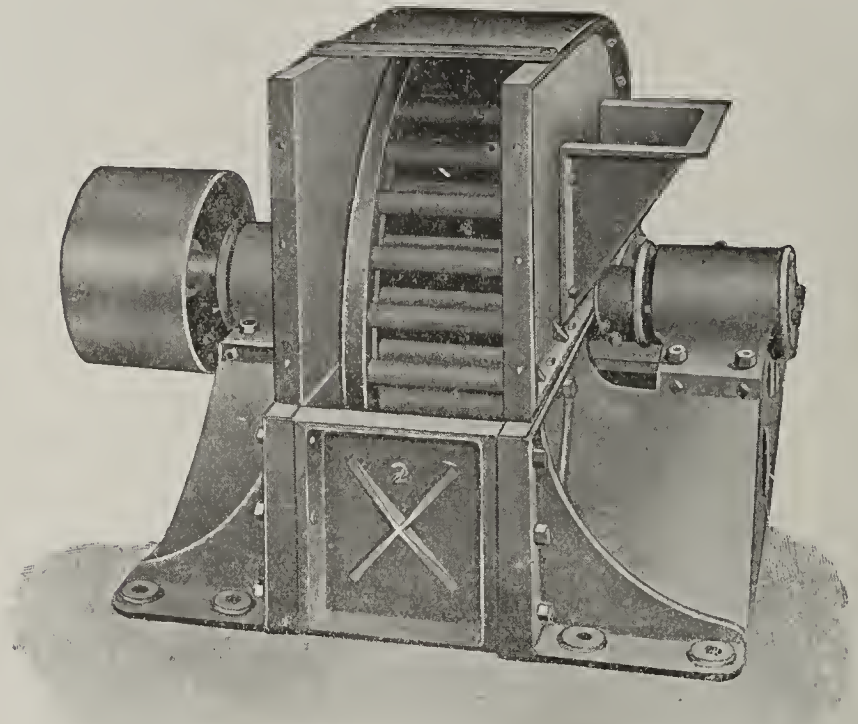

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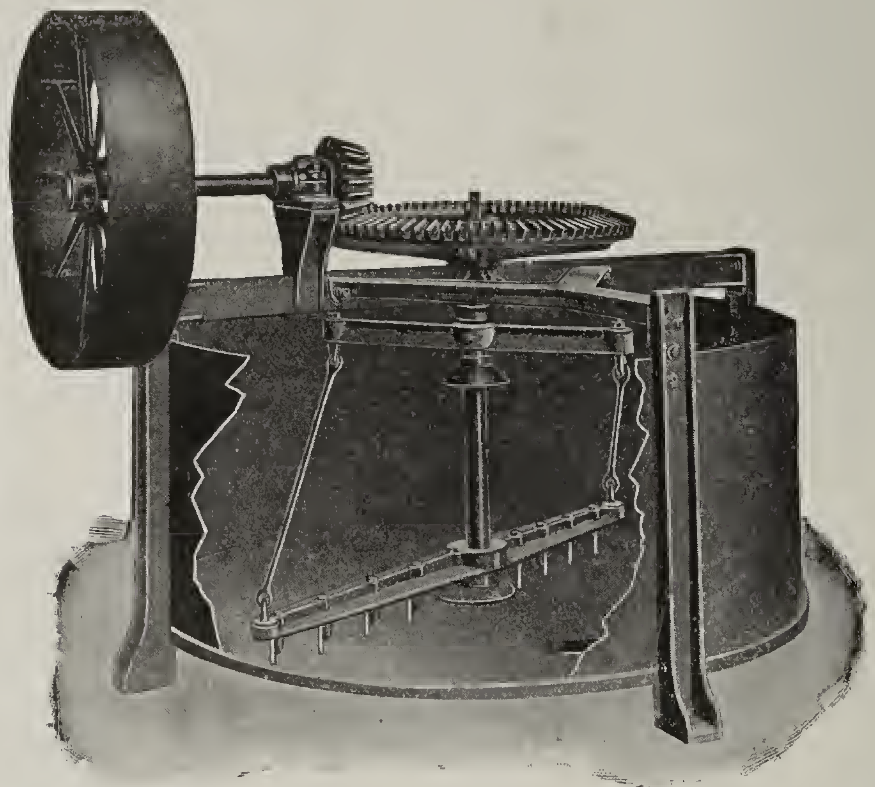

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A GOOD MIXER IS ALWAYS APPRECIATED

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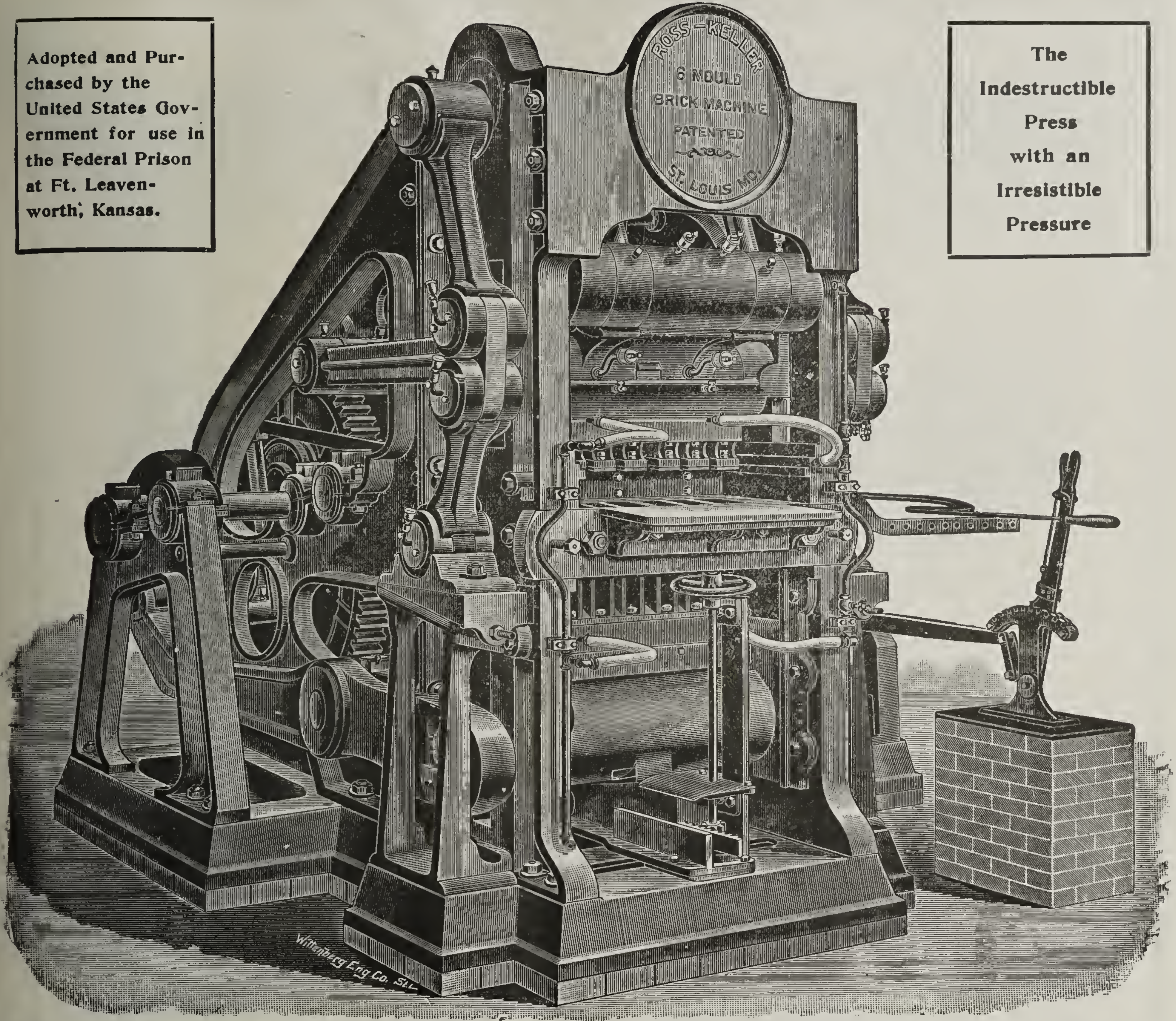
The Indestructible Press with an Irresistible Pressure



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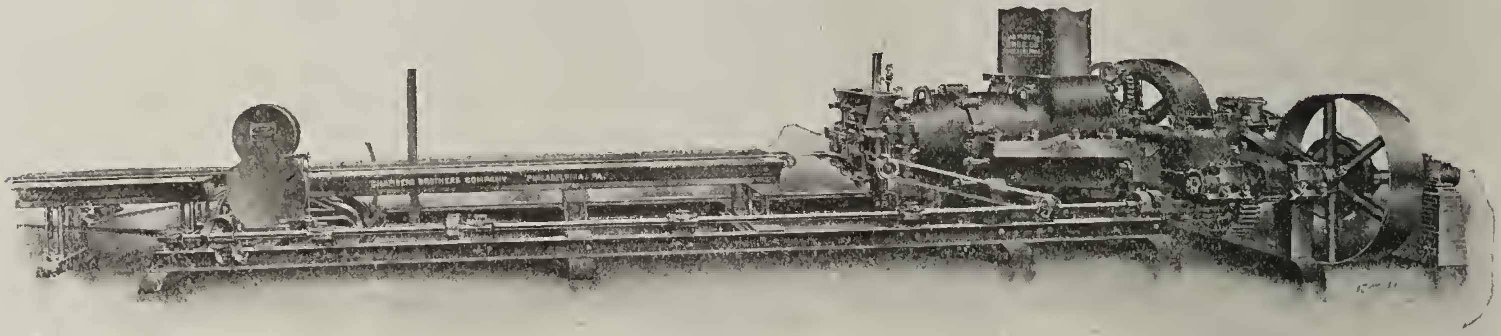

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For Grinding Tough Clays in which Small Stones may be Imbedded

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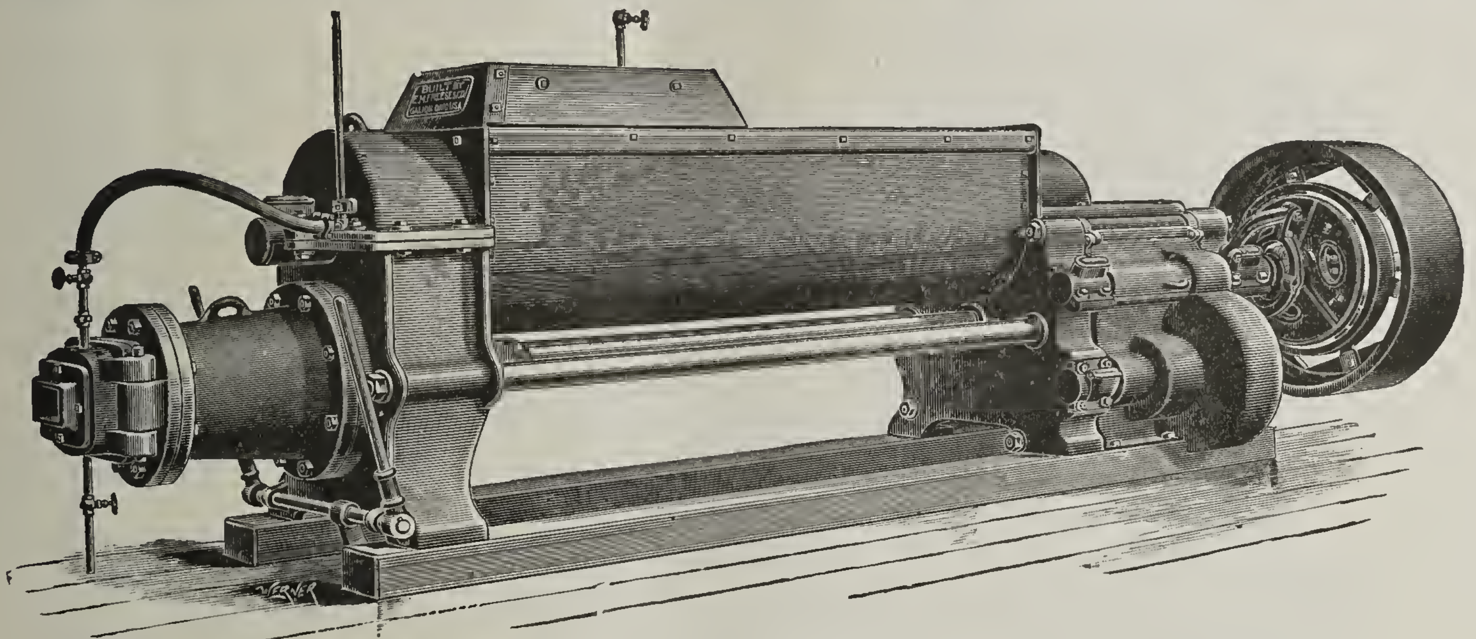

We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

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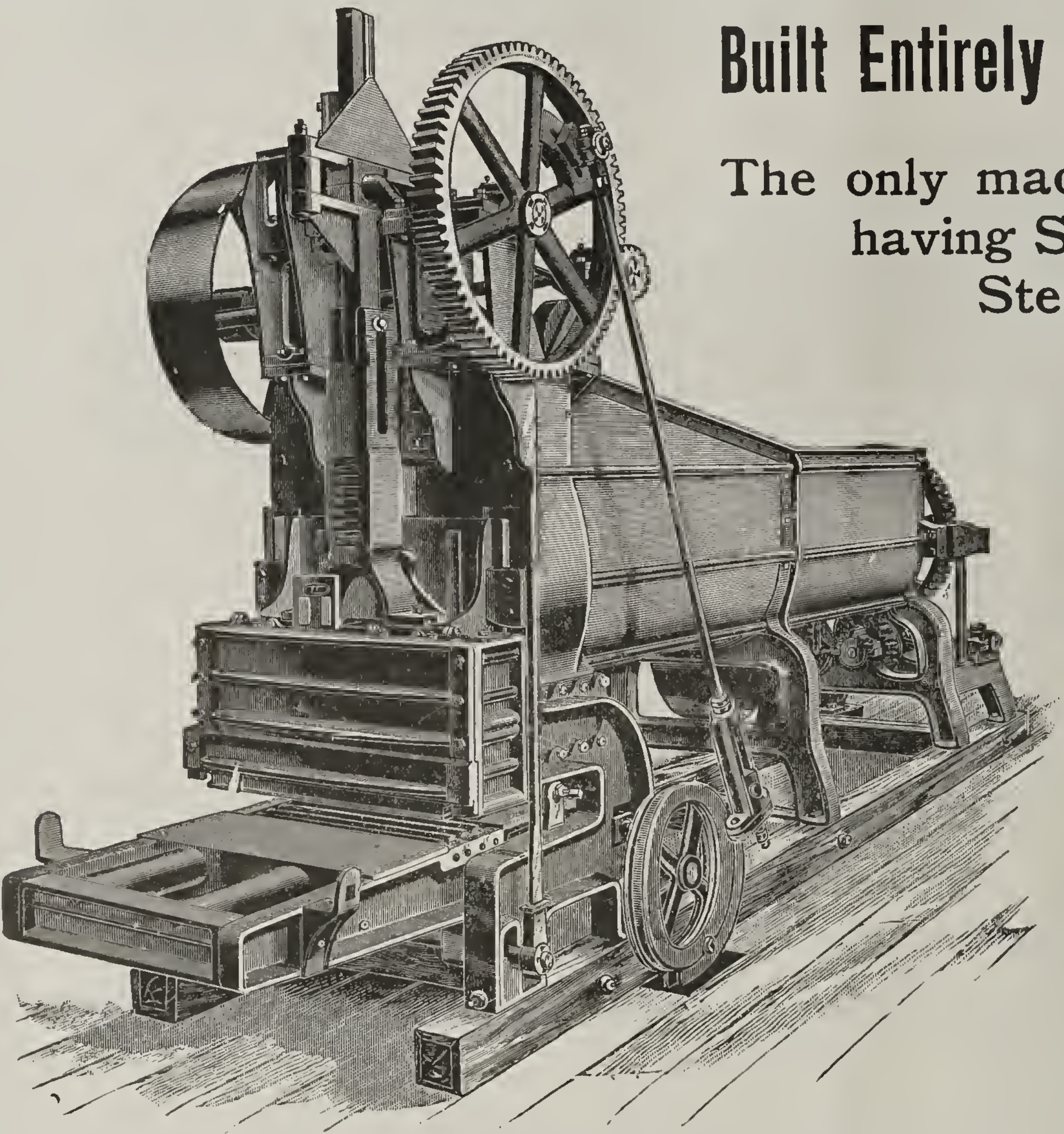

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Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

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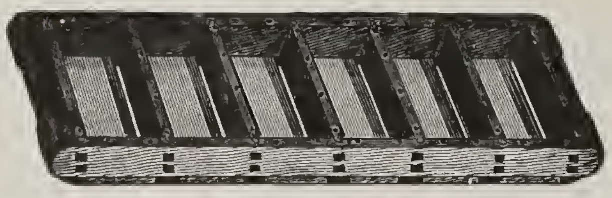

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Compound Disintegrators and Crushers

As Manufactured by Potts

Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

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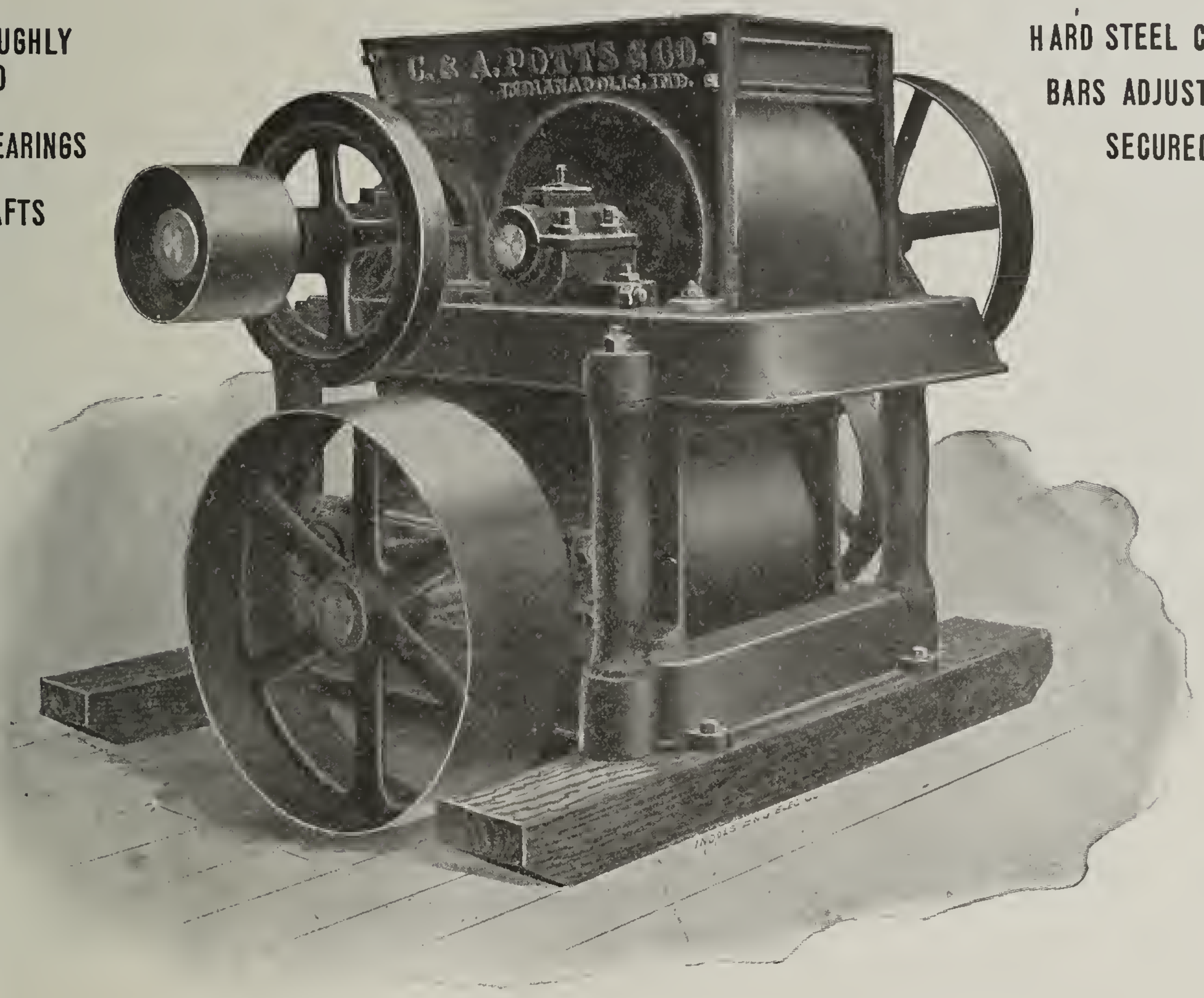
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Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank.
Will not choke or clog from hard, dry or wet, sticky clays.
The MOST GENERALLY USED Machine on the market.

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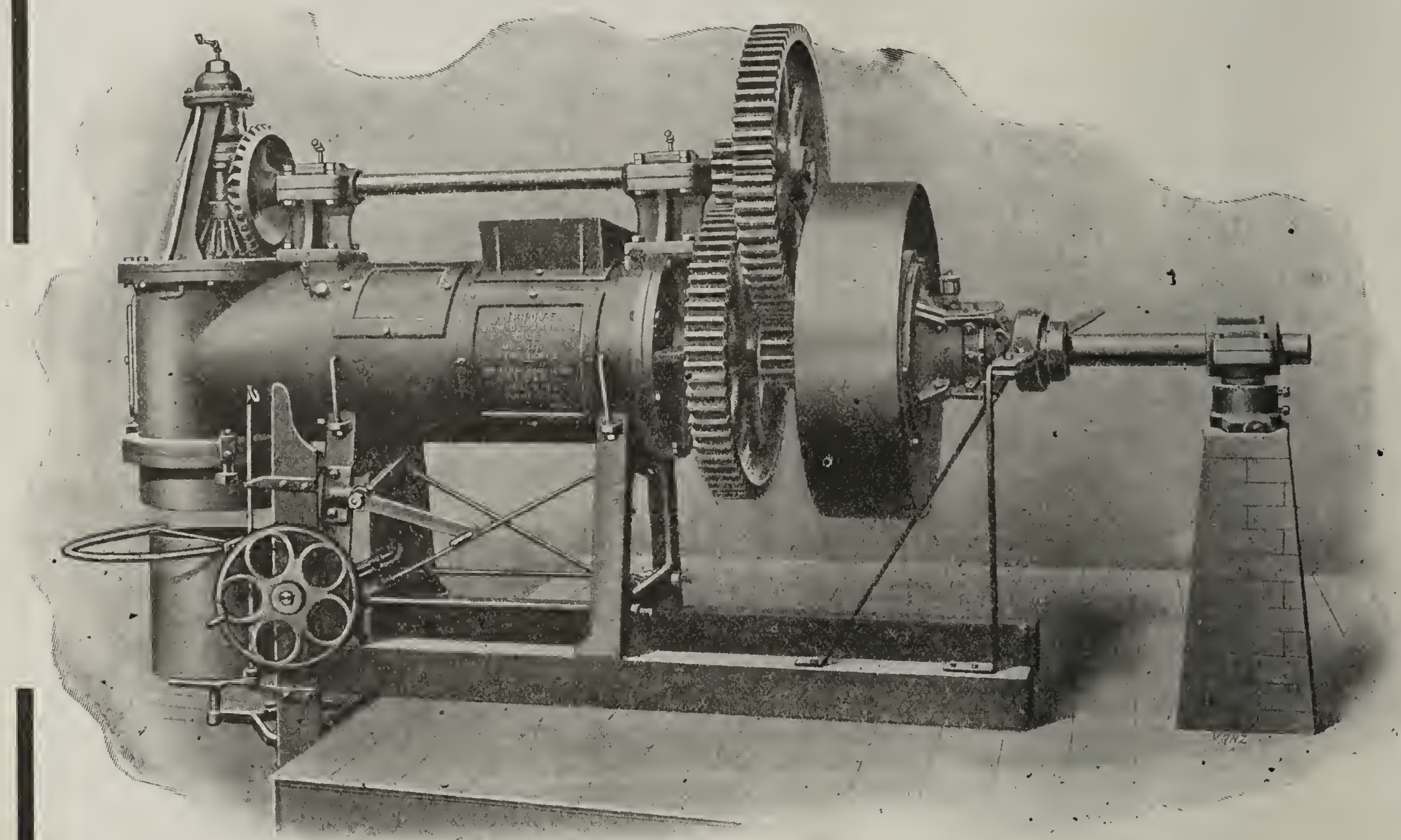
The Only Mill for Making Successfully Tile from 3-inch to 24-inch Diameter



Greatly improved in strength and convenience. Capacity increased forty to sixty per cent. Power required to operate forty per cent less than formerly

We also manufacture a complete line of high grade Dry Press Brick Machinery, Soft Mud Machinery, Dry Pans, Disintegrators, Crushing Rolls, Pug Mills, etc.

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Drain Tile Machines

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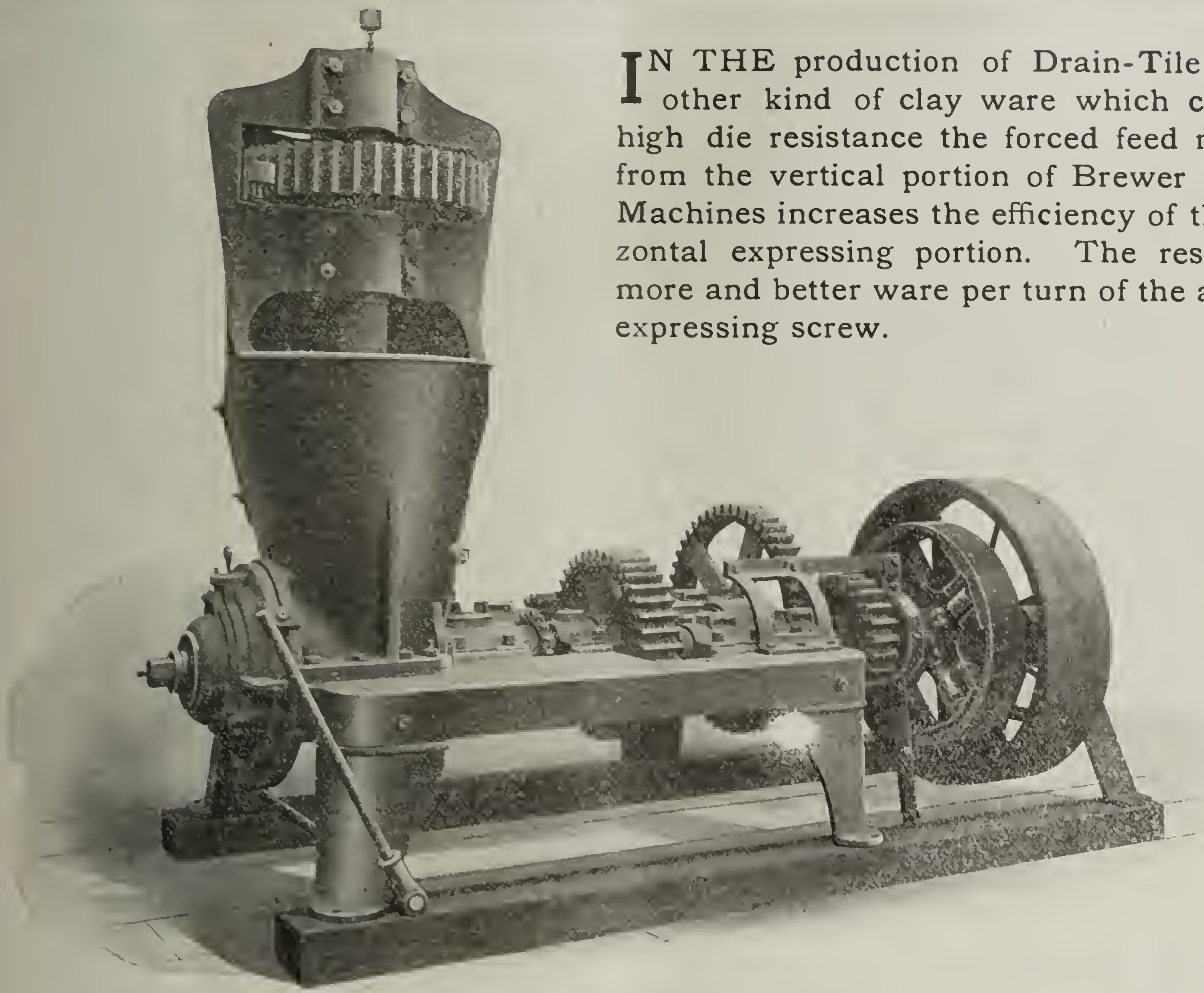

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We Build Three Sizes

ranging in weight from 5500 to 10500 pounds and in capacity from 1000 four-in. tile per hour up to all that can be handled by any present day method. The construction is high grade. Semi-steel gears. White-iron augers and castings. Forged steel knives. Self-oiling bearings.

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THE GUILDER ELEVATING AND LOWERING BRICK CAR

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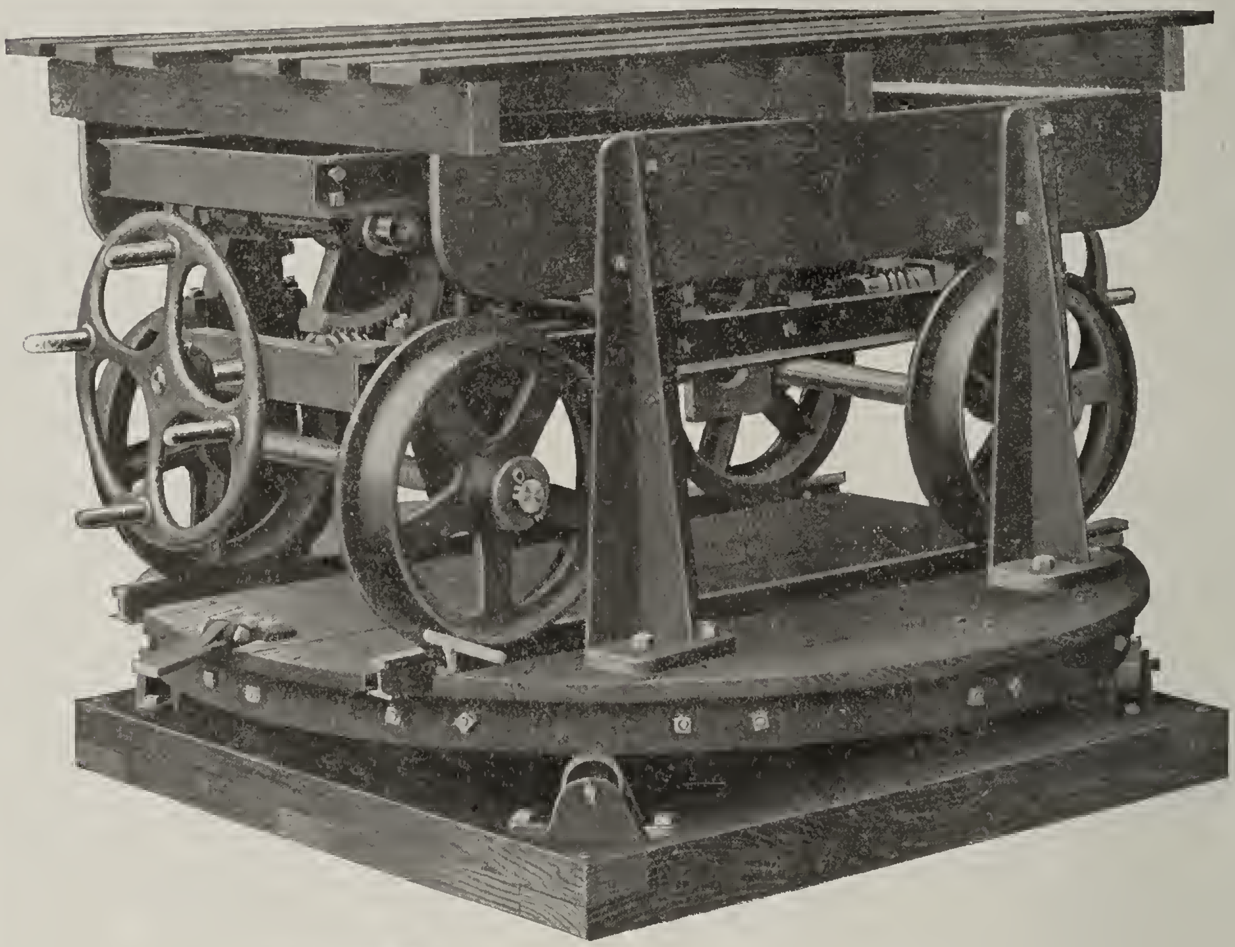

No Charge for plans or for the right to use this system.

Pay only for what you get and nothing for a piece of "Blue Sky."

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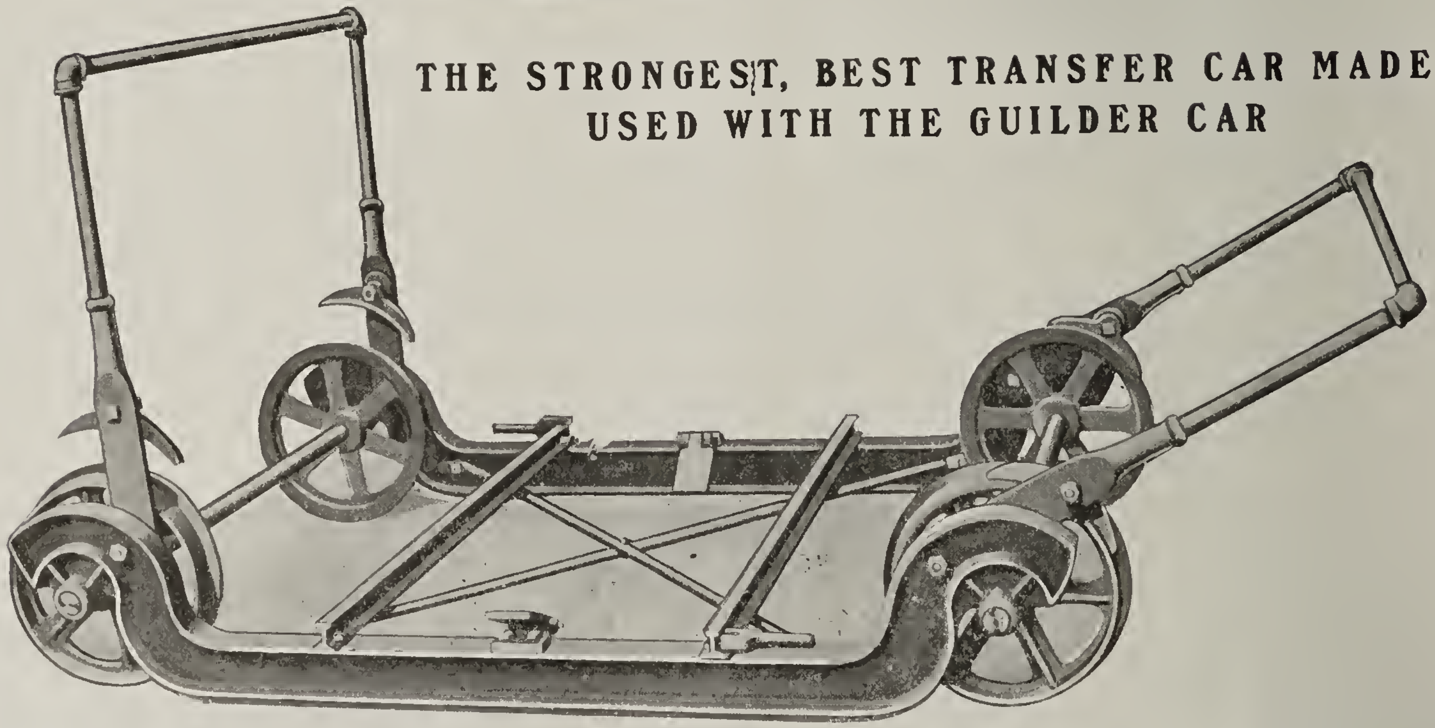

Write to the J. D. FATE CO., Plymouth, Ohio, about this system

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

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Single Copies, - 10 Cents

ILLINOIS CLAY MANUFACTURERS' ASSOCIATION ANNUAL MEETING

FOURTH SESSION

On Thursday morning, January 21st, the streets of Champaign were wet and the air murky. But the outward conditions did not affect the spirit of those who gathered at Elks' Hall at 10 o'clock for their parting session.

Before the "working session" was called to order, President Hammerschmidt announced that Mr. W. P. Blair, who was "his friend and the friend of every other member," wished to make an announcement before he left for his home. The members were sorry that Mr. Blair had to leave, but they greeted him warmly when he stepped to the front.

Resolutions Endorsing Appropriation Asking for $150,000

FOR GEOLOGICAL SURVEY; ALSO FOR APPROPRIATION FOR THE CERAMIC DEPARTMENT OF THE UNIVERSITY

Mr. President: There are two little matters that I would like to bring before this convention. I could not but think that—amidst the enthusiasm for our business that was shown at our banquet last night and in all the talk yesterday about taking care of our business and pushing it to the front—what a fine and practical thing it would be if it were possible for all of the Illinois Clay Workers to walk down the street at Rochester, New York, on February 1st, at the National Convention and show that the western part of this country was alive to its own interests. And I do hope that just as many of the Illinois members will attend that National Convention as it is possible for them to do. It begins on February 1st, as you know. That was one thing that I wanted to bring to your attention.

A more important thing is that of the Geological Survey, under the auspices of the United States Government, there has been recently established, as perhaps you are aware, a Ceramic Department of that Bureau that is in charge of Prof. Bleininger. The scope of the work of that bureau it is hoped will be enlarged, and it is hoped that the government will spend some money and put forth some effort toward development and research work that will aid and assist us throughout the entire country. The government is spending a large amount of money in experiments on subjects ranging all the way from tobacco to elephants, and I cannot see why clay, one of the most important natural resources of the country, shall not have some government aid and support. We are individuals have been studying it. We want the government to study it. There is an appropriation asked for, and recommended by the committee, in the Sundry Civil Appropriation Bill now pending before congress, asking $150,000 for this bureau. It is a small sum compared with the importance of the work that is proposed to be undertaken by the Geological Survey. Just remember, now, two things: That this $150,000 appropriation is in the Sundry Civil Bill. And remember that you speak of it to your congressman. I hope that every one of you, when you get home, will write a letter to your congressman asking him to support this item in the Sundry Civil Bill, because there are people in the American congress who want to cut that appropriation down to a sum so small that it will cripple the work. I would like to ask every individual member to write to his congressman asking him to support this item in the bill.

I want to offer this resolution so that it will come up from this body as a whole, in addition to your individual effort upon your congressman to support this bill. I think this association ought to pass a resolution approving the appropriation and asking the Illinois congressmen to support it as a whole. I, therefore, offer for reference to the committee on resolution the following:

Whereas: The Illinois Clay Manufacturers' Association regard the work of the United States Geological Survey as the greatest matter of importance undertaken by the government affecting the conservation of our natural resources; therefore be it

Resolved: That we, as an association, and as individual citizens, urge upon our senators and representatives in congress their active support and zealous effort to secure the appropriation of the sum of $150,000 included in the Sundry Civil Appropriation Bill, which sum is absolutely required by the Geological Survey to successfully carry on the important and beneficial work undertaken;

Whereas: The industrial progress of the great state of Illinois is a matter dear to the heart of every loyal citizen, and the development of the great natural resources of the state of vital importance to our future welfare, and

Whereas: That among our great industries few are of greater importance as regards invested capital, in the value of productions, in total of individuals employed, and in development of our resources than the industries connected with the manufacture of Clay Products, and

WHEREAS: That in the new field of industries in this State are the possibilities greater for development and the increasing of productive value, and the enriching of the resources of the commonwealth than, and in that of the Clay manufacturers,

WHEREAS: Much of the progress and development of this industry is dependent upon the scientific researches of the Ceramic Department of our State University and the training of our young men in this industrial science and

WHEREAS: The responsibility for the carrying on of this great work rests upon our State University, therefore be it

Resolved: That it is the duty of the Legislature of the State of Illinois to give its loyal support to this branch of the University work and to make such appropriation as may be necessary to provide this department with proper equipment and facilities for conducting its work in the best interests of the State.

Dr. Converse: I not only second the resolution most heartily, but I move the adoption of it by this body, the representatives of the Clay Manufacturers of the State of Illinois. (Applause.)

The motion was seconded and carried unanimously. The resolutions were declared adopted.

The President: I suppose that these resolutions will be in the next issue of all our Clay papers. By the way, it will be well if each member would make a copy of these resolutions and send them with a letter saying that the Clay Manufacturers of Illinois adopted these resolutions. Mr. Blair, don't you think that would be a good way?

Mr. Blair: Yes, I think it would be a very good way.

The President: The trouble is so few will have copies.

Mr. Blair: The only thing is this: That it is important that it should be done at once because that Sundry Civil Appropriation Bill will be taken up in the lower house by a committee of the whole and they are liable to work on that at any time. They will be called together as a committee of the whole at various times throughout the month of February for the purpose of taking up the items of this bill, item by item, so it is important that whatever is done be done quickly.

The President: I suggest that we get out copies and give them to the members of the different districts to send out.

This suggestion was carried out and copies were given to members of the association for presentation to their representatives.

Secretary Hartwell: The first paper on the program this morning will be, "A Problem in Air." Mr. Julius J. Koch, of St. Louis, Mo., is the author and will honor us by reading it. (Applause.)

A PROBLEM IN AIR

A SHORT STORY IN FOUR CHAPTERS.

Mr. President and Gentlemen of the Convention:

A person sometimes runs into peculiar things and a short time ago, upon a visit to a down town office, in the city of St. Louis, I listened to a little buttonhole talk, hence this story, which begins with

CHAPTER I.

A Conversation.

"Brother J. J. Koch," says genial P. B. Gibson, president of the United States Engineering Co., "here is a letter from Secretary Hartwell and you are booked for a paper at the Champaign Convention of the Illinois Clay Manufacturers' Association. So you put on your thinking cap, fill up your fountain pen and start right in."

"All right," said I, "but what is the subject?" "Pick out anything," said Peter B., "that will be of interest to the brick-making fraternity." "With your experience there certainly ought to be no difficulty in finding something new and entertaining."

"Well," said I, "so many various subjects have been treated at the past numerous conventions, that a new subject is quite difficult to find. But, wait a minute, do you think this will do?"

A number of years ago at one of the conventions this query came up:

Why is it, that a thunder storm will cause paving brick, burning in the kiln, to give way and stick, the results being worse the closer the burn is to a finish?

This same proposition was given to me for solution at a later date, and I am not aware that the results have ever been given out.

"That is just the thing," said Gibson, and that is the reason I was put on the program with this subject for a paper.

CHAPTER II.

A Theoretical View of the Situation.

I am aware that technical stuff is a little dry for some of our brick makers and therefore shall be as brief as is consistent with the merit of the subject, and only state facts and results, and keep away from wearying tedious calculations and formulæ.

As is well known the air causing the thunderstorm is saturated with water vapor and this presence of moisture in the atmosphere, as regards its use in burning brick, affects it in two ways, first, by diminishing its weight, and second, by reducing the amount of oxygen contained in each cubic foot of such air, thereby impairing its value as a supporter of combustion.

With the other burning conditions remaining normally the same, the solution of the proposition resolves itself along the lines of a "Problem in Air."

The weight of air, displaced by water vapor, when saturated with the same at 100 degrees F. is 6¾ per cent, hence its value as a supporter of combustion is also decreased 6¾ per cent, with similar conditions at 80 degrees F. the loss would be 3 2/3 per cent, at 60 degrees F. the loss would be 1 4/5 per cent and at 32 degrees F. the loss would be 3/5 per cent.

From the results of above calculation it appears that the worst conditions under the external working temperatures exist at 100 degrees F. and most of the phenomena subsequently shown in this paper will be based upon the condition of air at 100 degrees F.

It is a well known fact, that the effectiveness of a chimney depends to a large extent upon the outside cold air pressing out the column of hot air in the chimney or stack.

In our case we find with a chimney only 40 ft. high and with the air at 100 degrees F., that the column of dry air will weigh per 40 cubic foot 2.83 lbs. and the column of saturated air will weigh 2.74 lbs. per 40 cubic foot, and the loss of weight thus incurred will amount to nearly 3 1/3 per cent, which also is surely an item not to be overlooked.

Again we will assume that at 32 degrees F. it will take 150 cu. ft. of air to perfectly burn one pound of fuel, but this quantity or volume of air when expanded under a temperature of 100 degrees F. is increased to about 170 cu. ft. and such volume when saturated with water vapor absorbs 3,400 grains of water or say about ½ lb. of water, which when passed through the incandescent bed of fuel is converted into hydrogen and carbon monoxide.

Now these additional gases (the production phenomena of which is clearly shown in the operation of a gas producer) demand also oxygen for their combustion, and as the air supplied is shy 6¾ per cent, arrangements must be made for the additional supply of air. It is a well known fact, these hot combustible gases will seize upon oxygen for their combustion and will take it up wherever they can find it.

Now in our case the problem sums itself up as follows:

The hot gases entering the kiln, have as before stated, a powerful affinity for oxygen and as there is a shortage in the air as supplied, the supply must be taken from the burnt oxidised brick, as that is the only available resource. These gases practically burning "in situ," if the term may be used, that is, at the point or place of combination, or combustion create a high local heat, which is destructive to the burnt brick. This absorbing action of oxygen, of the gases, from the ferric oxide in the brick causes a reduction to ferrous oxide, that is an iron compound containing less oxygen, and in turn, this reaction causes a damaging effect of 200 degrees F. according to the accepted statement of various authors. What I mean by that is this: That a clay which will stand a temperature of say 1800 degrees F. under oxidising conditions for the iron, will break down under a temperature of 1600 degrees F. under reducing conditions.

CHAPTER III.

Confirmation of Above by Practical Experiments.

For the purpose of careful guidance, in making practical tests, the burners were supplied with a hygrometer, giving the humidity in per cent which could be read very easily.

We also used a thermometer to give us the temperature of the air.

Included in the outfit was an aneroid barometer to keep track of the various changing air pressures.

A draft meter was attached to the stack, so as to give us a check on the draft. Arrangements were also provided for a controllable secondary air supply.

We kept accurate records from the above instruments, experiments tried and from the burning results as well.

In a comparatively short time we had the burning proposition under control, so that we did not care what the weather conditions were, and at all times were in a position to forestall any coming possible unfavorable conditions by caring for the fuel and adequate air supply and stack draft.

CHAPTER IV.

Conclusions Arrived At.

That good results may be obtained and unfavorable conditions remedied when theory and practice work together hand in hand, that is, when they operate harmoniously and without prejudice, is amply demonstrated by this paper on "A Problem in Air."

At this stage of the paper the author had the intention to say, thank you gentlemen, but owing to a little confab with a brother, I desire to ask your indulgence for a few moments more to go a little more fully into the practical experiments.

As the experiments progress we elimated the hygrometer and thermometer and finally used only the barometer and draft gauges and by keeping careful account of the rise and fall of the barometer as compared to the increase and decrease of drop we were enabled to work out a differential chart or scale that was of great service to our burners, enabling them to catch coming disasterous results.

Having exhausted this topic I should like to take up another subject and that is the service of the technical man and for a beginning I want to say that the foregoing tests were made in the state of Illinois.

A different test made in your state was in regard to a red brick proposition which was not altogether satisfactory or successful and the remedy found was the discontinuance of the use of water from an adjacent pond, which was, unknown to the proprietor of the yard, fed from an abandoned coal mine, in turn furnishing sulphur water.

Another Illinois proposition was this, the utilization of a poor clay containing lime and iron by mixing with it an imported clay and thereby producing the beautiful yellow color effect governed by the double silicate of iron and lime.

The reason for citing these cases is this, the Illinois Clay Manufacturers appreciate the services of the technical man and the Illinois boys should have a good opportunity to study this branch of the business and be able to help the great industrial enterprise along, namely, clay working industry, and it should imbue the Illinois clay manufacturer with the proper spirit to erect a monument to their business foresite as regards their industry, by soliciting, individually and collectively, the services of their representatives at the capital in securing such an appropriation for the State University that will be of the best service in educating the younger sons of Illinois in fields of clay working industries and ceramics.

I again claim your indulgence for having made a long story out of a short one and will close with the Latin phrase "Finis coronat opus" literally meaning "A successful ending may crown your efforts."

The President: Gentlemen, you have heard this paper from Mr. Koch. It is a very excellent paper. Have you any questions to ask?

Mr. Mamer: Mr, President, I would like to ask Mr. Koch, speaking of the temperatures—were those taken by our regular heat gauge or by cones?

Mr. Koch: They were approximated by cones.

Mr. Mamer: Wouldn't the same reducing effect have the same effect upon the cones as it would upon the burning clay ware?

Mr. Koch: The iron that is in the lower cones, running up to a No. 3, was subject and will be subject to the same condition as the clay.

Mr. Mamer: You speak in that paper that clay that would burn safely under an oxidizing heat at 1803 degrees F. would burn just as safely under 1603 degrees. That is why I asked how the heat was taken.

Mr. Koch: I assumed in that paper that it would break down. If possible, burn your paving brick in an oxidizing condition, and if the clay breaks down it is a detriment which will occur by not having oxidizing conditions.

The feature of the paper is to increase your draft so that you always have enough air so that the reducing condition will not occur. Now in some propositions there is some doubt about that. A short time ago I visited a paving brick plant in Illinois, and on breaking a brick in two found a red core with a black ring surrounding it. And that again was surrounded by a red ring. That black ring showed that at some time or other there had been a reducing condition, but this brick having staid in the fire, it oxidized the brick only to a certain degree.

The President: The next paper is "Some Points in the Manufacture of Paving Brick and Some of the Cost Saving Devices and Methods to Improve the Quality of the Ware." By R. R Smith of Chicago He is now a senior student at the University of Illinois.

SOME POINTS ON THE PAVING BRICK INDUSTRY

It is a somewhat surprising fact that in this age, in which the general superiority of paving brick over asphalt, crushed stone, cinders, pine-block, etc., for use in road and street construction is almost universally recognized, that such a comparatively small amount of literature is to be found that deals directly with the manufacture of these brick.

Many catalogues, pamphlets and bulletins are to be obtained that deal directly with the machinery employed, the plant construction, or some other one phase of this industry, but articles which treat with it from a non-mercenary standpoint, and for the benefit of the manufacturers at large, are sadly in the minority.

In the following notes on the paving brick industry, I wish to pose rather as a bibliographer than as an authority.

in many instances, I have quoted directly from "The Pyro-Chemical and Physical Behavior of Clays" by Ross C. Purdy and J. K. Moore, "Notes on Drying and Burning" by Prof. A. V. Beininger, Wheeler's "Vitrified Paving Brick," and from direct information given to me by Mr. Stull and Mr. Knote. The original ideas which have been introduced are observations taken at the paving brick plant of the Bessemer Lime Stone Co., at Bessemer, Pa.

In this discussion I will assume that a desirable geographical situation for a plant has been secured and that sufficient capital is at hand for its installation. Naturally the first subject to follow is the material and how it is to be tested in order to find whether or not it is capable of undergoing the necessary preparation and at the same time produce as a finished product an A No. 1 paving brick. There is a prevalent opinion among paving brick manufacturers that the best chances of finding suitable clays for this purpose are among fossil clays and shales. This idea is erroneous. For instance, clays from which a first class paving brick can be manufactured can be found in the strata of any geological age under almost any geological conditions. Fire clays of all ages are being successfully used in paving brick manufacture. Alluvial deposits have been discovered that are likewise suitable for this purpose. But very little, if any importance can be attached to the chemical analysis of the clay. Geological age and distribution or chemical analysis are therefore very unsatisfactory criterions.

In obtaining a specimen of the clay which is to be tested it should be put through a very rigid process of sampling. Too great care cannot be taken in selecting a sample of the material which is to be tested. A good sample is one that will show the fair average properties of the deposit—both physical and chemical. One very good method of sampling is as follows: The deposit is divided roughly into sections 50 ft. square by means of a transit or, if a transit is not available, an ordinary tape or surveyor's chain will answer the purpose. At various points in each of these sections a hole about six inches in diameter is drilled to the full depth of the deposit. Four or five holes in each section should give a fair sample. The clay that is taken out of these holes is placed in one large pile and the entire batch is put through the process of "quartering."

The method of quartering is very simple.

Description

The sample is now ready for testing. There are a number of tests to which the clay may be subjected. The drying and burning shrinkage determination is quite essential. This is made by making the clay up into a number of rectangular briquettes. Each briquette is marked with a straight line, the exact length of which is known. After drying the length of the line is measured and again after burning. From this data the amount of shrinkage is easily computed. Another test which has been but rarely used, but which should in time become quite popular is the porosity and specific gravity test.

$$\%\ \text{P} = \frac{\text{wet W—dry W}}{\text{wet W—susp W}}$$

$$\text{Sp. Gr.} = \frac{\text{dry W}}{\text{dry W—susp W}}$$

A number of briquettes are made up as in the shrinkage test and burned at various temperatures from about cone 01 to complete vitrification. The % porosity and the Sp. Gr. is then computed. Two curves may be drawn from the data thus obtained—one, the porosity curve in which the temperature along the abscissae is plotted against the per cent porosity as ordinates; the other, the Sp. Gr. curve in which the temperature is plotted against the specific gravity.

Probably the most important test to which a paving brick should be subjected is the rattler. This test is almost universally used in the paving brick plants of this country. The rattler is an abrasion test and is decidedly the most valuable means of arriving at the durability and relative value of paving brick. A brief description is as follows: The rattler should be hung on trunions and should not have a shaft running through it which might cause the brick to jam between the shaft and the shell; it should be horizontal with about one-half inch spaces between the staves to permit a prompt escape of the chips. The shape should be polygonal, the diameter at least thirty inches and the length at least thirty-six inches. The amount of brick and iron cubes introduced should not exceed 25% of the volume of the rattler. The speed should be between twenty and thirty revolutions per minute and the test should continue for about 1800 revolutions. A good average paver will rattle between 13 and 20%.

These are some of the tests which may be applied to the clay in order to find its suitability to produce a good paver.

In regard to the actual design and construction of the plant, I have little to say. The general methods of winning the clay, its preparation, drying and burning, are subjects which are familiar to every manufacturer. However, there are several points, especially in the preparation that I would like to emphasize. In many of the plants of today, the sole idea and aim of the manufacturer is to get his clay through the machine and drier out of the kiln, and converted into money in the least possible time. This is a very commendable trait, but can his clay stand it? In nine cases out of ten—No it cannot, and what is the result? The quality of his work deteriorates, his reputation as a manufacturer vanishes, and the losses on his sale sheets explain the rest. It is my opinion that many of the plants in this country that are making an inferior grade of ware could, with very little effort produce a first class paver were it not for insufficient preparation. Many of the so called die troubles and difficulties in drying may be traced to just this insufficient preparation. Pugging is a process which is not generally understood. Sufficient time must be given to have the clay thoroughly mixed with water. In most cases this is not done, the mills being too short or pitched too rapidly to accomplish it. If sufficient pugging is not done we may look for laminations and considerable cracking of the ware in the drier. This is sometimes remedied by allowing the wet clay to stand for several hours. Pugging is more successfully done in a longer pug mill, having the knives or blades about 90 degrees apart and using warm water. In some cases a wet pan could be introduced.

Lamination is one of the main difficulties in some yards. There are two main causes for lamination. The clay in passing through the die acts like a viscous liquid and the central portion of the mass is inclined to move faster than the outer portion, due to the friction between the faces of the clay and the die. This form is easily remedied by sufficient lubrication. Another form is due to the augur in the ordinary stiff mud machine. The clay takes the motion of the augur and as the knife passes over it, it becomes polished. This polished surface will not re-unite and hence gives rise to lines of weakness. This is somewhat overcome by using an end cut instead of a side cut as the end cut represents only a small part of the laminated cross-section. Corrugation of the augur is also beneficial.

There is one point in the manufacture of paving brick that gives considerable room for discussion, namely, the process of repressing. Repressing consists of putting the freshly made stiff mud brick into a die-box and momentarily subjecting it to a heavy vertical pressure. This forces the clay into the rough unfilled corners, thus making a more shapely and regular appearing brick. It also rounds off the sharp corners which gives a better foothold for the horses and also saves considerable wear and tear on the brick. On the other hand, repressing partially destroys the homogeneous internal structure that is given it in the die, thus making the brick denser in some portions than in others. This in turn is likely to cause cracking in the drier. There is another point against the repress. If a brick in coming out of the die is not perfectly homogeneous, the pressure exerted by the repress is quite likely to open up any small holes that are present which will weaken the structure considerably. There are cutters on the market today which are made especially for use in the manufacture of paving brick. The round corners are produced similarly as in the repress. By means of such a cutter, the repress and its accompanying expense may be done away with. The installation of some such cutting machine might be of some material benefit to some plants where repressing is at present considered indispensable.

In most of the present day plants there are a number of minor details which may seem insignificant on the face, but which if improved upon, would show up wonderfully in the profit columns. The installation of belt conveyors for carrying the material to the pans and for carrying the waste back to the machine is quite practical. Small rotary driers could be installed in many cases to increase the output of pans or disintegrators. The action of the driers is to break up the natural structure of the clay and the dried material will pass through the grinding machines at a much faster rate.

The practical brick-maker should be ever ready to install time and labor-saving devices as long as the practicability has been thoroughly demonstrated, but, at the same time should be constantly on the lookout to guard himself against the many "catch-penny" ideas advanced by enthusiastic salesmen.

The most important step in the manufacture of paving brick is the burning. First class burners, although none too plentiful, are absolute necessities. For the benefit of the industry at large and for his own material benefit, the up-to-date manufacturer will prevent underburned, overburned brittle, and other inferior brick from being shipped out of his plant as No. 1 pavers. Continuous kilns have been tried in connection with pavers and have recently met with considerable success. The saving in fuel by the use of the continuous kiln averages between 30-45%.

In the last few years there has been a great improvement in the quality of paving brick. This is due to more thorough preparation, more practical machinery, more perfect driers and kilns, and by a more careful and thorough study of the conditions and methods to be employed in the manufacture. The cost of the superior quality of the paver of today is no greater than that of the inferior products of a few years ago. However, there is still considerable room for improvement, both in the present method of manufacture and in the resulting product, and such improvements will continue to make the paving brick the best and most economical article for good road and street construction. I thank you. (Applause.)

The President: Gentlemen, you have heard this very able paper by Mr. Smith. It is open for discussion.

Dr. Converse: I would like to say to you, our Mr. President, and to you the members of this Illinois Clay Manufacturers' Association, that I consider the paper that has been read by Mr. Smith a very able and thoughtful paper. The gentleman evidently has had experience, or else he has studied the matter thoroughly. I believe two things that are mentioned there are matters of very great importance. One is pugging, in which I believe the majority of paving makers are thoughtless. There should be proper pugging of their material before they make their brick. I am a strong believer, and have been for a good many years, in doing away with the repressing process. I suppose, possibly, one reason of this is that the repressing process is a pet scheme of my own and I am an inventor of a process by which brick are reunited at the ends. I know that brick so treated stand a much better test than those that are repressed. Repressing breaks the bond out from it unless the material is very soft and plastic, and if it is so soft and plastic as not to break the bond, the better brick it will be. I am convinced that the less a brick is interfered with the better it will be.

Mr. Barr: Regarding the pugging of clay, I myself had an idea that pugging should be very beneficial. In an experiment we assigned a certain amount of clay to our machine and we ran that clay back and forth through our machine ten or twelve times. We then made that clay into brick, or blocks, and burned them alongside of some of the ordinary pugging. This extreme pugging made a beautiful clay, but after it had been burned and rattled we could not discover that there was any difference in this clay that had been pugged over and over again than there was in the ordinary clay.

The President: I should say that pugging ten or twelve times was too much. The idea of Mr. Smith was that there should be enough pugging for uniformity in all of the clay.

Mr. Barr: It may be that I carried it to an extreme. That was our experience, that it gave us neither better nor worse tests in the rattler.

The President: There seems to be no further discussion. We have reached the limit of the papers on the program. They have been most interesting and instructive. We have left on the program a few subjects under the head of discussion. The first is, "Should Different Coals Be Used in Each Stage of the Burning?" Who knows? You run your factory. I run mine. What may be good over there may not be good in Lombard. What I pay for coal, well, you may get the same coal a good deal less. But there does not seem to be any discussion on that question.

We have another question to consider, "How do You Extract the Fine Stone from Your Clay?" Now, that is a question in which I am interested and always have been. I would like to have you discuss it. I would like to hear from Mr. Solfisburg.

HOW DO YOU EXTRACT THE FINE STONES FROM YOUR CLAY?

Mr. Solfisburg: Mr. President, don't you think you have been longer at it than I have been? Don't you think you ought to be able to tell about it better than I can tell? I have had only a year's experience. You have had ten or twelve years.

Mr. J. M. Mamer: Mr. Chairman, if nobody will say anything, I will tell what we have done. I think we have been working along that line probably as long as anybody. I think that any one who is in the clay manufacturing business and has traveled around over the northern section of Illinois, appreciates the fact that the surface clays are very much alike; that is, at least, as far as lime stone is concerned. We have an abundance of limestone in our clay, varying in size from, probably, one hundred pounds in weight down to a pebble the size of a hazelnut. Probably smaller.

Our process is to work our clay bank on a long slope and we tear that, or loosen the clay up. In other words, we use a harrow or clay plow. That plow has ten teeth on and we loosen our clay to a depth of an inch or an inch and a half. It is necessary to put on three horses to pull the plow. The cutting edge on the teeth is about one and one-quarter inches wide and they are made out of an inch and one-eighth hexagon tooled steel, and we have to temper them down to a very nice edge to wear and not break. The fellow that rides this "goat," as we call it, because it comes pretty near being a goat when ridden over these stones, after he gets his clay loosened up, he takes the wheelbarrow and goes over it; he picks up what stone he finds convenient and then hitches on to his clay gatherer and then hauls in the clay. Of course by that you will understand that the clay is worked fairly dry. During dry weather, it gets too dry. We have been taking the clay into the house with a bucket elevator and dumping it into a chute. It is then taken by a cable that carried it into the pulverizer. Of course, the man that does that, takes whatever stones he finds and throws them out. After passing into the elevator it passes into a screen. Our upper screen is made of 5/16 round cable wire, the lower is perforated with holes. Whatever passes through that screen we discharge outdoors and the discharge is probably as much clay as stone, but it does not amount to a great deal. It is not worth bothering about. Whatever goes through that screen goes into the clay. Every hour or so the fellow feeding the clay stops for a few minutes and catches the tailings from the lower screen and throws them out. In that way we have been successful in making a very nice class of ware from a clay that was practically worthless.

Mr. Lincoln Solfisburg: Now that Mr. Mamer has started the subject and told of his experiments, I will add what little I can to the subject. For a great many years we worked surface clay, and we used to haul about a mile. But right close to the yard we have a clay about fifteen or twenty feet deep, exactly the same kind of clay that Mr. Mamer has. We worked about a year and then began to investigate. We have one of the clay plows, but the clay got so hard that we could not work it. I pulverize it the same as Mr. Mamer has told and I elevate it into a larger screen. Then I run it into an open bin. Then I run it into another crusher. Now, we are getting very good results. The stone is practically eliminated so we make tile.

Mr. Mamer: If I understand Mr. Solfisburg, they use their clay practically as it comes from the bank, not necessarily drying it.

Mr. Solfisburg: With the pulverizer it has got to be practically dry—not wet. I do not haul the clay and bin it, but I pulverize it.

The President: I believe that Secretary Hartwell has a communication which he will read.

Secretary Hartwell: I have a letter from F. W. Fitzpatrick, of Washington, who last year so kindly gave us the paper on "Cement vs. Clay Products." It is addressed to me, but our honored friend is a friend of the association and whatever he writes to me is written for us all. Last year he gave us a most valuable document. It gives me pleasure to read his communication:

LETTER FROM MR. FITZPATRICK

Washington, D. C., Jan. 19, 1909.

Mr. George H. Hartwell, Secretary, Illinois Clay Manufacturers' Ass'n, Beardsley Hotel, Champaign, Ill.

Dear Mr. Hartwell: First and foremost let me congratulate you and your fellow conveners on this auspicious occasion of your 31st annual meeting. A long life to you and may your meetings ever increase in interest and in benefit to the best material for building that man has so far developed out of Mother Earth.

Prof. Bleininger is to be with you, I note. Suggest something to him. He is about to begin making official government tests of the clay product. Engineer Humphreys has been making concrete tests for the same purpose. Now then, the concrete folks have utilized those tests and the process of making them for the wisest kind of publicity. The papers have been full of what Mr. Humphreys said concrete would do and how concrete had stood this and that exhaustive test at his hands. It was all the biggest kind of advertising for concrete and under government auspices. What was sauce for the goose, surely ought be sauce for the gander and it's up to you folks to get all of the publicity and advertising for the clay products you possibly can out of Prof. Bleininger's tests. He has had a splendid precedent established for him and it will show him that, besides the magnificent work he is doing technically for the product, he can also help the interests very materially. Talk to him.

Wednesday evening I'll knock off fire-fighting and my other humorous duties long enough to drink a good, big snifter, along about the time that you fellows get around to the toasts, to the clay products, the jolly good fellows, who make them and to the success of your 31st meeting.

Sincerely yours,
(Signed) F. W. Fitzpatrick,
Executive Officer, International Society of State and Municipal Building Commissionery and Inspectors.

Mr. Fitzpatrick's letter was cordially received and on motion of Dr. Converse, Secretary Hartwell was instructed to write to Mr. Fitzpatrick and to say that the communication was received with pleasure and that the thanks of the association of the Illinois Clay Manufactures were tendered to him. Dr. Converse then put his words in the form of a motion. The motion was seconded by several of the members; it was carried unanimously and with much applause.

The President: I notice Professor Bleininger in the seat back there. We would like to hear a few words from the gentleman. (Applause.)

THE UNITED STATES GEOLOGICAL SURVEY

Gentlemen: Our president has asked me to state briefly what we expect to do in the new section of clay products established by the State Geological Survey at Pittsburg. I would like to say that congress has defined the activity of the new clay products section quite clearly. The section is supposed to test all clay products of every kind which are being used by the government in its various branches. This of course means all kinds of brick, building brick, paving brick, fire brick, glazed brick, sewer pipe, conduits, fireproofing, roofing tile, terra cotta, etc., in fact, every clay product that is to be used.

Now besides this work, which includes the writing of specifications and carrying on the tests, we also undertake some work in the line of examining the clays on the public lands of the United States, and finally we carry on researches which may help the clay products manufacturers. But it is our chief duty, as has been said before, to test the clay products to be used by the government. This means that we have to make extensive experiments which we are pushing as rapidly as we can. At the same time important problems confronting the clay worker will not be neglected.

The structural material laboratories, it is hoped, will be in possession of a complete and unique equipment for testing the various building products. The testing machine will be used by either the cement or clay sections as the work demands it.

A machine is now in construction which will test brick piers as long as sixty feet, with a capacity of ten million pounds. Of course the results of the tests we expect to publish just as fast as we can get the work out. Those of you who desire the bulletins can get them by writing to the director of the Geological Survey.

The laboratories are being established in Pittsburg at the old United States arsenal, which was changed from a supply depot, consisting of old storage houses into an investigation laboratory.

But at Pittsburg other work is also being carried on. They are testing the use of the low grade fuels, slacks as high as 25 to 40 per cent in ash, and are trying to utilize these low grade fuels. This, of course, is of interest to all people, because the cheaper we can get our power, the better we are off as a nation.

All the tests are carried on with large samples, with car load lots and they are hence more than laboratory experiments. Tests are also being made with gas, kerosene and alcohol engines.

Elaborate tests are also being made with regard to mine explosions. A special study is being made of dry coal dust explosion and the beneficial effect produced by the presence of moisture in the air. For this purpose a steel cylinder 150 ft. in length is employed with all kinds of registering devices.

The study of rescue apparatus for saving miners caught in mines filled with poisonous gases, as well as for fighting fire is carried on in great detail. So called oxygen suits are used which are provided with oxygen tanks enabling the wearer to work three or four hours in a poisoned atmosphere. Many mine foremen and fire bosses come to the laboratory to learn the use of this apparatus.

The technologic laboratories are also experimenting with the manufacture of brickettes made from lignites so as to utilize the great deposits of lignite in various states. Since these coals are too friable to withstand transportation and use they must be pressed into small brick. This is done by disintegrating the fuel coarsely and by adding a cementing substance like tar, enabling it to be pressed into brick. The use of tar is being done away with by simply beating the lignite in a cylinder until the natural tar appears to a sufficient degree. This enables the manufacturer to carry on this process much cheaper, since tar is a heavy item in the expense bill.

The technological laboratory differs from other laboratories in trying to carry on experimental work on a larger scale, from the technical point of view which aims to benefit the industries as well as the nation. Primarily its aim is to maintain the resources of the country.

The President: Before we go into other subjects that we have, I want to tell you gentlemen that I am a member of the legislative committee and I want to ask each and every one of you to write to your senators and representatives and urge that we have that legislation. We must have your help. I must be down to Springfield or otherwise it will not go through. This thing is a hardship on the members of that committee. When I go there I find that you have got to be a "good fellow," even if you don't pay anything for votes. At least I have. You gentlemen see your representatives and senators and say to them that the clay industry demands the support of that bill. That will make it easier for us who do go there.

Mr. Stipes: Wasn't it put to a point yesterday to get some statistics of the clay industries of the state of Illinois? I think it would be wise if that were gotten out and printed and sent to each member.

Secretary Hartwell: The motion was made by Mr. Stoll and seconded and carried, that the statistics of the state of Illinois should be prepared by the secretary of this organization, with the assistance of Professor Rolfe; that they should be printed in pamphlet form, and a sufficient number of them should be prepared for the use of the members of this organization. Not only for our own use but for the use of the clay manufacturers of the state who have not been in active daily attendance at our meetings, that we should have enough copies printed for liberal distribution by all the clay manufacturers of the state. These were to be printed and the intention was, as expressed at the time, that they should be sent to Professor Rolfe, who should take them to Springfield. I think it would be well to have enough printed so that Prof. Rolfe could have a supply and so that the secretary could have an additional number of copies to supply all requests of clay manufacturers throughout this state.

Mr. Stipes: I think it would be wise to get these ready at once. They would show just exactly what we mean. I think we should give the statistics of the value of the clay industries of the state; we should show the number of manufacturers; we should show the number of people who are employed in the clay industry. I think it would surprise all of you to know the dollars that are invested and how the industry has grown in the last few years.

Secretary Hartwell: It is simply a matter of government statistics to get it out and put it in form. The professor asked that we print about five hundred copies. That may not be enough. We may want to reach 500 or 600 manufacturers in this state. It is not sufficient that we send to each one a single copy. Many of our members will send to their senators and representatives a copy. Many of them can use extra copies in other ways.

Mr. Barr: I think it will be well, too, in sending out this information to give to each member memoranda showing just what it is we ask our senators and representatives to do. If I should go home today and start to write a letter to our member of the legislature and tell him what I wanted him to do, I wouldn't know what to say to him.

The President: We will prepare a sample letter. That will make it easier for us all. While we are waiting for the committee on resolutions, we will hear the secretary's report.

Secretary Hartwell: The report of your secretary is as follows:

REPORT OF SECRETARY

RECEIPTS.

Membership fees	$184.00
Banquet ticket	1.50
	$185.50

DISBURSEMENTS.

Banquet expenses, music, cigars, etc.	$47.50	
Elks' Hall	20.00	
Operator of calcium lights	5.00	
Printing, programs and stationery	43.25	
Circular letters	1.85	
Badges	17.45	
Express	.45	
Postage and Ry. fares	27.41	
Book	1.00	
Secretary's wages	15.00	
		$178.91
Balance to be turned over to the treasurer		$ 6.59

The President: The secretary hasn't any easy job. I think that was the meaning of the question: "Will he have to walk home again this year." Last year we were short and we had to increase our annual dues. Secretary Hartwell even gave up his annual stipend to make up the deficiency. The secretary's work is not continuous throughout the year, but it is very hard for a month or two before our annual meeting. I think that we run on too small a margin.

Gentlemen: You have heard the secretary's report, what will you do with it?

Mr. Walter: I move that the report be approved and adopted.

Mr. J. M. Mamer: I second that motion.

The motion was put and carried unanimously.

The President: Now we will have that report from the treasurer.

Mr. J. M. Mamer: The report of the treasurer is a little shorter than the report of the secretary. We had on hand in January, 1908, $3.92, and we received from the secretary in 1909, $6.59. According to the ordinary rules of arithmetic I have in my hands, $10.51. To put it officially, this is the treasurer's report:

REPORT OF TREASURER

Balance on hand January, 1908	$ 3.92
Received from secretary, 1909	6.59
	$10.51

Mr. Currie: I move that the treasurer's report be approved and adopted.

The motion was seconded and carried unanimously.

The President: Is the committee on resolutions ready to report?

Mr. Pratt: They will be here in about five minutes.

The President: If I had my way, I would like to have the program out six weeks before the convention. We should send a copy to every member. And then we should send another one after a while to remind him and bring him in.

A CHANGE IN MEMBERSHIPS

Mr. Barr: It seems that we are running pretty close on finances. I do not know that I have any suggestion to make just now to increase our resources, but if we cannot do any better, I am willing to chip in and raise a little money if it is necessary, and I know that there are other members who will do the same.

Secretary Hartwell: I do not think there is any chance to increase the membership fee in any way. I think if we did that, it would hurt the attendance. In looking over the books, I find that there were 51 clay workers at the Peoria meeting that are not at this meeting. Now there must be some reason for it. It is either that the program is not good enough, or—which I do not believe to be true, that the increase of the membership-fee from $1 to $2 has kept them away. You all agree with me that that is improbable. The difference between the number who were present at Peoria and who are present today is too large—51 that were there are not here. I would suggest that we have an initiation fee, if possible; of a dollar, we will say; and then keep a membership book and send all our old members a bill whether they came to this meeting or not, let us have a continuous membership. As it is now, it is not a continuous membership. Those that are here pay. The 51 that were at Peoria last year will not pay. That is they will not pay unless the association authorizes me to send them a bill for dues, as I believe I should do. Now, again, supposing that I spend, or the secretary should spend $150 or $200 to get up a convention and we should have bad weather, or, if you want to say so, that the program was not as good as it ought to be, or something like that, and we would only take in a part of the money necessary to cover the expenses. What would we do? Who would pay the bills?

Mr. Barr: You will have to assess those that did come. I think they would all stand by you.

Secretary Hartwell: That is the difficulty about getting up a program. The secretary never knows how much money he may spend. Very often we could get someone to come and do some work for us for possibly the amount of his expenses. It might be that we would want an able speaker to address us or some expert on some subject to appear before us and it might be that he could not afford to come here unless we would guarantee his expense account. The secretary hardly knows how to act in anything of that kind. I do believe that making a continuous membership would help. I do not think that anybody in the state of Illinois would object to paying his annual dues whether he attended or not. They get the reports in the papers afterward. They know not only that we are here in session, but they know that we are trying to devise the best methods of advancing the industry in the state. To a considerable extent, the good of all is the good of each one. I believe that in the way of a continuous membership we possibly could get a membership of 300 out of the total of 600 in this state and some from the adjoining states. I think in that way we could have plenty of money to do business with and not run into debt.

So it was with the publicity committee. We cannot do anything. Our hands are tied. It was the Illinois Clay Manufacturers' Association that first brought to the attention of the clay manufacturers of this country that there was need of more publicity. I am pleased to say that this subject was first brought up by your secretary and I had a committee on resolutions appointed that would be favorable to it and drafted out just what we wanted to do and the committee on resolutions reported on same. A copy of this resolution was sent to the Iowa and Wisconsin associations by a special messenger, Mr. Harry de Joannis, and favorably acted upon at both conventions. Also a copy of the resolutions was sent to the National Association, but this was tabled or no attention paid to it. There, Charles A. Bloomfield, of New Jersey, practically introduced the same resolution, at any rate, it is producing the same results as though ours had been taken up, and results are what we are after. The members of the Iowa association have spent nearly $2,000 making tests of drain tile, etc., and have the cement drain tile advocates now on the run. The Wisconsin association organized their publicity department and did considerable good work on a much smaller sum than their Iowa neighbor. The National Association Publicity Bureau was organized and started the good work with J. Parker Fisk, of New York, at the head. They raised only about $600, which was used in a preliminary work and in sending to the press some very good literature on the value of clay products over all other kinds of building materials. Undoubtedly they will do much good the present year.

Now with the Illinois association the publicity committee was not even appointed by the president. We had only $3.92 in the treasury. What can a publicity bureau do with such a princely sum of money? We are enthusiastic when we are here; we enjoy the papers that are read and profit by them. Now, what we need is money.

The President: Why not just take this for granted, that the secretary be instructed to send out bills to the other members of his association and telling them that if they want to continue as members they should remit their $2—making it a continuous membership.

Mr. Stipes: I think that would be an excellent scheme. I think that 75 per cent or more would respond with the $2. The National Association has that plan.

Secretary Hartwell: Yes, it has; and it works well.

Mr. Stipes: I know that they sent me a nice letter reminding me how good a time they had and what I missed by not being present and asking me to send my money. I sent it. I believe that the ones who stay at home rather than the fellow who goes, that can generally better afford to pay his dues.

Mr. Barr: If you don't send in your $3, the next year you go you have to pay $5 at the National Association.

Secretary Hartwell: That is what I had in mind by asking an extra dollar for initiation fee for new members. We would have to pay $2 each year as fees or $3 later for reentering fee. We might also give a certificate of membership, showing that they are members of the Illinois Clay Manufacturers' Association.

Mr. J. M. Mamer: Mr. Chairman, I believe I was a little bit instrumental a year ago in having the dues raised. It seems by the statement just made by the secretary that our membership has so fluctuated that the proper thing for us to do if you want to remain as an organization is to make our initiation fee $1 and then our dues $2. Then if we have fellows who want to attend every other year or so let them pay their dues each year or initiation fee and dues when they come.

The President: I think that is too high.

Mr. Mamer: I mean that the annual dues with the initiation fees should be $3 for a new man to come in. I make that as a motion.

Mr. Gibson: I second the motion.

Secretary Hartwell: I do not think it would be good policy for us to make that dollar initiation fee apply next year—I mean until after the next session. I think we had better get in as many in the coming year as we can and then let all understand that the proposed increase in cost would be in the future if they did not remit their annual dues. Give the secretary power so that he can collect the back dues.

The President: I am an old member of this association and I am going to work for it as I always have. I think we ought to ask the secretary to go back in his books for three years—and get all of the names of the members who have been at meetings, and send them word that they should send the $2 now and be a permanent member of this association. If they don't come, let them pay the initiation fee of $1 hereafter.

Secretary Hartwell: I think there would be 125 members in the three years that we could send bills to.

Mr. Mamer: I have been talking with Mr. Gibson, who seconded my motion. I think it might be well to change our motion to this effect: That the secretary in sending out these notices may also state that after our next meeting there will be an initiation fee of $1 to all new members. With the consent of my second, I will change my motion to read that all the old members that the secretary has on his list be notified that a resolution has been adopted that after our next meeting new members coming in will have to pay in addition to their dues, an initiation fee of $1.

The motion was carried unanimously.

Mr. Walter: Mr. President, does that mean that if anyone is three years' back they will have to pay six dollars.

The President: No, they should all have a chance to come in under the $2 ruling.

The President: Let the committee on resolutions read their report.

Mr. Lansing: Mr. President, on behalf of the committee on resolutions, I wish to say that your committee, consisting of Charles W. Lansing, of Chicago, chairman, Walter M. Pratt, of Earlville, and F. G. Matteson, of Galesburg, have prepared the following:

REPORT OF COMMITTEE ON RESOLUTIONS

Whereas, The Illinois Clay Manufacturers' Association regard the work of the United States Geological Survey as the greatest matter of importance undertaken by the government affecting the conservation of our national resources, therefore be it

Resolved, That we as an association, and as individual citizens, shall urge upon our senators and representatives in congress their active support and zealous effort to secure the appropriation of the sum of $150,000 included in the Sundry Civil Appropriation Bill, which sum is absolutely required by the Geological Survey to successfully carry on the important and beneficial work undertaken.

Whereas, The industrial progress of the great state of Illinois must be a matter dear to the heart of its every loyal citizen; and the development of the great natural resources of the state of vital importance to our future welfare, and

Whereas, That among our great industries few are of greater importance as regards invested capital, in value of production, in total of individuals employed, and in development of our resources than the industries connected with the manufacture of clay products, and

Whereas, That in no field of industry in this state are the possibilities greater for development and the increasing of productive value, and the enriching of the resources of the commonwealth, and

Whereas, Much of the progress and development of this industry is dependent upon the scientific researches of the Ceramic Department of our University of Illinois and the training of our young men in this important branch of industrial science, and

Whereas, The responsibility for the carrying on of this great work rests upon our State University, therefore be it

Resolved, That it is the duty of the legislature of the state of Illinois to give its loyal support to this branch of the university work and to make such appropriation as may be necessary to provide this department with proper equipment and facilities for conducting its work in the best interest of the state, and be it further

Resolved, That the secretary be directed to prepare an address for presentation to the state legislature properly setting forth the importance of the clay industries; the possibilities for the development of these industries and the necessity for encouraging and supporting the work of the State University in this field.

Whereas, The Illinois Clay Manufacturers' Association in convention here in Champaign is terminating another most interesting and profitable meeting, and which augurs favorably for its future success. Therefore be it

Resolved, That the thanks of the association be given to its officers for their efficient services and their manifest interest in the work.

Resolved, That the association confesses its inability to fitly express its sincere appreciation of the hospitality of its Twin City hosts. To the university faculty its sincere thanks for the constant interest and assistance. To President James, Prof. Baker and Prof. Kinley, and all who participated in making our social function a complete success, and to the manager of the Beardsley Hotel which has so added to our comfort,

Whereas, The legislative committee possesses faculties for efficient work,

Resolved, We tender them our hearty co-operation in their efforts to secure our much needed legislation and appropriations.

To the Interurban Traction Company we extend our hearty thanks for the good will they have shown by instructing their conductors to accept the badges of our organization for passage on their cars.

(Signed) Charles W. Lansing, Chicago, *Chairman,*
W. M. Pratt, Earlville,
F. G. Matteson, Galesburg.

Mr. J. M. Mamer: I move the adoption and approval of the resolution as read; it was seconded and passed unanimously.

The President: We are now awaiting the report of the committee on nominations.

REPORT OF COMMITTEE ON NOMINATIONS

Mr. Barr: I am the chairman of the committee on nominations. This is our report.

We, your nominating committee name for
President—Wm. Hammerschimdt, Lombard.
Vice President—George J. Walter, Chatsworth.
Secretary—George H. Hartwell, Chicago.
Treasurer—J. M. Mamer, Campus.

We also name for Publicity committee: George H. Hartwell, chairman, Chas. W. Lansing, D. C. Haeger.

Respectfully submitted, C. C. Barr, *Chairman,*
D. C. Haeger,
Geo. J. Walter,
Louis W. Lambert,
Geo. B. Roller,
Nominating Committee.

Mr. Stipes: If there are no other nominations, I move that the secretary cast a ballot for the election of the gentlemen named by the nominating committee.

Mr. Roller: I second the motion.

The President: Gentlemen, you have heard the motion. All of you who are in favor will please say, aye.

The motion was carried unanimously.

Secretary Hartwell: I hereby cast a ballot for the following officers:

President—William Hammerschmidt, Lombard.
Vice President—George J. Walter, Chatsworth.
Secretary—George H. Hartwell, Chicago.
Treasurer, J. M. Mamer, Campus.

I also cast a ballot for the committee on publicity: George H. Hartwell, Chicago, chairman, Charles W. Lansing, Chicago, D. C. Haeger, Dundee.

INSTALLATION OF OFFICERS

A speech was at once demanded from William Hammerschmidt. He said:

Gentlemen, I came down here with the intention of not accepting this. I am willing to do for this Association, or for any other association that I am a member of, all that I can in my power. And I am willing to do that in the next coming year. If my life be spared, I will do everything that I can do for the clay industry of the state of Illinois. I thank you, gentlemen, for the confidence you have in electing me to this office for another year.

Mr. President: We want to hear from the new Vice-President, George J. Walter.

Wr. Walter: Gentlemen, You know that I cannot make a speech and you know that I don't want to make a speech. You have elected me to an office. I esteem the honor that has been done me. Once before in my life I was honored as I have been today. Once before my fellow clay-men said I was worthy of the office that I now hold. I thanked them then. I thank you now, again, today. I filled this office before. I did it with the intention of doing all that I possibly could for you and I will try to do the same again this year. As for the presidency, I do not think that I could fill that office as well as Brother Hammerschmidt has. He is large enough to fill the chair. He is good hearted enough, too. Gentlemen, I am very much obliged to you for the compliment extended to me by this election. I thank you.

The President: Mr. Secretary, the members now want to hear from you.

Secretary Hartwell: Gentlemen, I thank you for the honor of again electing me Secretary of this Association. All I can say is that I shall do all that I can to make the following year as successful as it is in my power. I will do that. But, gentlemen, I cannot do it alone. I cannot do it with the help of the Executive Committee. To succeed as I would, which means to succeed as we all would, requires the help of each and every member here, and the help of each and every clay manufacturer in the State of Illinois. Combined with your help there is no doubt but what we will continue to be a splendid organization.

The President: We must hear from the Treasurer.

Mr. J. M. Mamer: Mr. Chairman: I was elected Treasurer for the first time last year and it was my hope that when I would report this year that the balance would be decidedly increased. While the balance has increased some, yet it is very far from what it ought to be. Nevertheless, this Association has a great work before it and it is up to every member to do his share of it and we hope that when the Executive Committee, through the Secretary, calls upon any member next year to prepare a paper, that member will do his level best to be present and do all he can by helping along the program. I thank you for the honor conferred upon me again.

The President: We will have the report of the Committee on Publicity:

REPORT OF COMMITTEE ON PUBLICITY

Your Committee on Publicity would respectfully report its recommendations as follows:

We believe that there is a large majority sentiment in this Association favorable to some definite and aggressive action to combat the unwarranted and unfair competition of cement products.

Yet there is a decided uncertainty among the members of this Association as to the best and most effective plan to follow in this matter.

We believe there is no inclination among the members to be parsimonious if some practical business like plan can be devised by which their interests can be served.

Various suggestions have been advanced for providing ways and means for carrying on this work, including a plan for percentage assessment according to value of production; also a flat assessment on each member of the Association.

In the eyes of your committee, however, it appears that the most satisfactory plan would be to leave the matter entirely to the decision of each member as to what he is willing to do in the way of financial support for carrying on this work. We propose to let every man put the question up to himself as to how much he is willing to pay to help fight the unfair competition in this territory.

As to plans for work, we believe that the possibilities for accomplishing effective benefits in behalf of the clay interests are unlimited and are restricted only by the extent to which the clay products manufacturers of the state will permit us to put such plans in force.

We recommend that the committee be empowered to conduct such work as may appear best in behalf of the interest of the clay industries of the state; that we be empowered to act in conjunction with the other associations of the states and nation, and that the members of this Association be urged to give this committee their support and good will.

Mr. Lansing: Mr. Hartwell, the Chairman, Mr. Haeger and myself want to be of some use to the Association. It is not enough that you have made us a committee to look after this thing. We want to feel that the Association is with us. We do not want to be antagonistic to the sentiments of a single member. Otherwise we would rather stay out and not make any effort whatever. In talking to several members this morning I endeavored to get their sentiments. I feel that it is the idea of the members here that this is really an important question. There was one idea that we ought to assess in accordance with the value of the production. In Wisconsin they make a flat assessment. The National Association makes a flat assessment. I do not believe, from what I hear—and Mr. Haeger and Mr. Hartwell agree with me—that such recommendation would meet the approval of members here. And yet everybody knows that if you would carry the thing into effective work it needs financial support, and we suggest that you leave it to the members to give us such support as you think wise.

I wish Mr. Blair was here to tell what the Paving Brick Association does in the way of promoting the interest of paving brick. You must all know that they have really more severe competition than any other branch of the clay industry. They have a great asphalt company against them and the trust is forming a large number of companies. They have the granite paving block company against them and the wooden block fighting for contracts, and yet it is a fact that today in all the important places in the central west, ninety per cent of the street paving is done with brick; that the amount of brick paving has increased year by year, and this has been done through the co-operation of the paving brick men and their publicity efforts. It has got to a point now where they don't have to try to sell brick. Prices take care of themselves. The orders take care of themselves. All that they do is to keep increasing the demand, and their publicity work has done that. I believe that there is much in their work that would be of good to brick and tile makers of Illinois.

The President: I will take this opportunity to start that ball rolling with a contribution of $5.

Mr. Lansing: I will put in $5 myself.

Mr. Barr: If you conclude to do it that way, you can call upon the Barr Company for $25. (Applause.)

Mr. Roller: I make a motion to accept the report of this commiteee and without taking any definite action, leave the matter in the hands of the committee.

The motion was seconded by several members and was carried unanimously.

Mr. Mamer: Mr. President, if I got the line on that resolution right, the plan was that it be left with the individual members what they would do to aid this publicity and I suggest that when this committee organizes, they have a Chairman, Secretary and Treasurer; that they send out a letter to every member of this Association, and others, and ask for their financial aid to this publicity fund, and in that way get the matter into their hands.

The President: That is good. My idea was to get the consensus of opinion of this meeting—whether it would be $1 or $5 or what it would be.

Mr. Roller: They have not formulated a plan. If they find that they could not handle this question as well alone as they could in connection with other states, the combined associations might take it up in a way and get the different states that are adjoining to co-operate and in that way do better work than a single state could do alone. The same publicity would apply to one state as well as another.

Secretary Hartwell: As it stands now it is about the way it should be. Don't tie us down. Let the committee be free to work.

Mr. Mamer: Leave it all to the Publicity Committee.

The President: I want to make this statement for the Clay Workers' Institute. I hope that all the members who are here will stay for the next two days. They have an excellent program. You are here and I hope that every member will take this in. You won't be sorry for doing so.

WHERE ARE WE TO GO IN 1910

As I am on this Executive Committee again, it is for us to decide as to the Convention for next year. We don't want to be tied down to any particular location. It will be a hardship to us. But we would like to have an expression—at least I would. Do you want to go elsewhere?

Mr. Barr: As a general proposition I don't believe we can do better than come to Champaign. You have the University here and all the help that you can get from it. I think this is naturally the place for the meeting. There may be some special year or some special cause that might make it advisable to go elsewhere, but as a general proposition, I think Champaign is the place for the meeting.

Mr. Roller: I move that the matter of selecting the location for the next annual meeting be left to the Executive Committee.

Mr. Currie: Personally, I feel that Mr. Barr did not go hardly far enough. He said that he did not think we could do any better than go to Champaign. Now, I don't think that we could be as much benefited by going elsewhere. The Clayworker's Institute is something that we all profit by. We cannot ask them to come to us. We ought to go to them.

The President: For the benefit of the members I will state this so that you will all understand it. The Faculty at the University has told me that we could come to Urbana and hold our Convention in their halls. They would provide us a hall to hold out meetings whenever we wanted to, free of charge. It might be that we would want to go to Urbana.

The President: That invitation might be accepted, so if there is no objection to it, I would like to know.

Secretary Hartwell: In behalf of many friends of the Association, newspaper men, clay men, manufacturers and dealers and machinery manufacturers, I wish to invite this Association to come next year to Chicago. There are other places to visit besides Champaign, and good places, too. There is no reason why we cannot go to other places as well as here. Of course there are a good many things to our advantage in coming here, but we can have our meetings in other cities. Leave it open, so that the Executive Committee can do as they wish.

Mr. Barr: My experience of holding meetings in large cities is that there are so many other attractions that you can't get the attendance there that you could at some smaller place.

Mr. Mamer: I move that we adjourn to meet at the call of the Executive Committee, and that the place of meeting next year be left to the decision of the Executive Committee.

The motion was seconded by a dozen members. It was carried unanimously and the President announced that the thirty-first annual meeting of the Illinois Clay Manufacturers Association was adjourned, subject to the call of the Executive Committee.

JOHN MILLER DIES AT ATLANTIC CITY

John Miller, fifty-eight years old, head of the Washington (D. C.) Brick and Terra Cotta Company, and well known in Washington business circles, died Feb. 26th in Atlantic City, N. J. The body was brought home by his son, William Miller, who was at his father's side when death came.

For five years Mr. Miller was a sufferer from muscular and internal diseases. A few months ago his health became so bad that on the advice of physicians he went to Atlantic City to recuperate. He was accompanied by his wife, son, and a daughter, Mrs. B. W. Bracket.

Mr. Miller was born in England, and came to Washington about thirty-five years ago. He was employed by several large concerns, and made a study of the manufacture of brick, and some years later became identified with the Washington Brick and Terra Cotta Company.

The widow and six children survive Mr. Miller. They are William, Mrs. B. W. Bracket, John H., Agnes, Sarah, and Allison Nailor Miller.

A NEW RULING FOR KANSAS

A man may be resting, but still is performing a duty, according to the decision of the Kansas supreme court in the suit of the Pittsburg (Kansas) Vitrified Brick Co. against Edwin Fisher from Crawford County. Fisher is the stepfather of James Larue, who was killed in the plant of the company. Larue and others were working at the brickmaking machine and it was Larue's time to rest. While sitting on a truck he was told that another machine was out of order and he started over to help fix it. His clothing caught in the machinery and he was killed. The courts held that even though he were resting and wanderd over to help do something that was not particularly his own work he was performing his duty and the company was liable for damages.

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Laugh at yourself and the world will join in the laugh.

A wise man ceases to be wise when he begins to boast of his wisdom.

Its time to quit knocking and go to work. You can't saw wood with a hammer.

Its a good thing to have opinions—and its a better thing to keep the lid on them sometimes.

Silence may be golden, but it does not always get the coin. That is why we are always after you to send in the one dollar for the CLAY RECORD.

Emerson says: "If a man can write a better book, preach a better sermon, or make a better mouse-trap than his neighbor, though he build his house in the woods, the world will make a beaten track to his door."

It isn't enough to make good goods. You must persuade the buyer, so that he, too, believes in your goods, and sometimes a word of persuasion counts more than a few decimal points in quality. A good product and then good advertising, hitched abreast this team wins. Do you drive such a team yourself?

EARLY SEASON FOR HUDSON RIVER BRICK YARDS

The promise of early navigation will have the effect of stimulating early activity in the Hudson river brick trade. The Kingston yards are expecting to make an earlier start than usual.

Reports from different points on the river are to the same effect. Navigation has been resumed on the Hudson river as far north as Kingston. In the lower Hudson navigation was hardly closed this winter. There was only a brief time when boats failed to reach Haverstraw. The result of the situation is that quotations are steady at the figures which have prevailed for a fortnight.

Ordinarily the opening of navigation to up-river shipping points causes a fall in prices from winter levels. This year the event has been discounted by the fact that navigation has not been closed below Haverstraw, except for a brief period. The unusually heavy plan-filings have also tended to steady and support the market. No shipment from any point north of Haverstraw has yet been received. Excavating for foundations has commenced earlier than usual, and all the prophets are saying that unless the month of March holds some surprises in the shape of bad weather, demands for building brick will be on a spring schedule much earlier than usual.

CONDITION OF THE BRICK MARKET IN CHICAGO

The Illinois Brick Company and all other manufacturers of brick have advanced the selling prices of their produce to $5.75 and $6 per thousand. This rise in prices is equal to about $1 compared with the market quoted a month ago and the manufacturers say the quotations are firm.

In it the first time in about two years that manufacturers of brick have been able to lift their prices with any degree of stability. Overproduction has been the main cause for the demoralization and the rivalry between the twenty odd manuafcturing companies in Cook County has been keen.

The bolstering up of prices has brought strength to the market for Illinois Brick stock on the Chicago exchange, and somebody has been picking up the shares at a moderate advance in quotations during the last week or two.

It is stated that the brick companies are trying to arrange an agreement between interests that will prevent further demoralization of prices in the future. The matter is a difficult one to bring about in view of the Illinois anti-trust laws.

TEXAS BRICK TARIFF AMENDED

Austin, Tex., March 10.—The Railroad Commission authorized the following amendment to the brick tariff:

Vitrified brick, in carloads, minimum weight, 50,000 pounds per car, when consigned to and for the use of the city of Galveston, from Thurber to Galveston via the Texas & Pacific Railway and International & Great Northern Railway, 10 cents per 100 pounds, effective March 5.

OBITUARY

Theodore Willett, 82 years old, a brick manufacturer of South River, N. J., died at the home of his son after a two weeks illness with pneumonia.

John Miller head of the Washington (D. C.) Brick and Terra Cotta Co., died in Atlantic City, N. J., of internal and muscular diseases. He was 58 years of age and had just bought another brick manufacturing plant.

Mike Butler, a prominent brick manufacturer and capitalist of Austin, Texas, died at his home of Bright's disease, from which he had been suffering for eighteen months. He was 67 years of age and owned brick plants in Austin, Houston and Elgin, Texas.

William Lahey, the well known Hudson River brick manufacturer, died at his home in New Windsor, N. Y. About a year ago he sustained a stroke of paralysis, from the effects of which he never recovered. He was 61 years of age and the owner of five yards, one at Hartford, Conn., one at Fishkill and three at New Windsor.

FIRE! FIRE!! FIRE!!!

The brick manufacturing plant of Garner & Co., at Haverstraw, N. Y., was almost destroyed by fire caused by an overheated steam pipe. The loss is estimated at $2,500. One hundred and fifty men are thrown out of employment, and James Morrison the engineer, was scalded by an exploding steampipe so as to be in a serious condition.

The plant of the Streator (Ill.) Clay Manufacturing Co., was nearly destroyed by fire causing a loss of $80,000, with insurance of $38,000. The plant was owned by Robert Green of Chicago, and will be rebuilt as soon as possible.

ADVANCE ON APRIL 1 TO TERRA COTTA WORKERS AT PERTH AMBOY

The workmen in the terra cotta factories of the National Fire-Proofing Company, at Perth Amboy, N. J., who went on strike for higher pay just after the election last November, received a 7 per cent advance in wages. A notice has been posted at the Raritan works of the company informing the men that, beginnig April 1, they would recive 10 cents more per day than they now receive.

The men who quit work in November said then that they had understood from somebody that they would obtain a raise if Mr. Taft were elected. There was considerable disorder, and troops had to be called upon to preserve the peace. The strikers went back to work after having obtained an advance of 4 per cent in wages and the promise of another advance later.

THE GENERAL SLOCUM SINKS AGAIN

Hull of old steamboat, renamed and carrying brick, goes down laden with 500,000 brick, the property of Sayre & Fisher, of Sayreville, N. Y. The Maryland, a barge, formerly the hull of the General Slocum, sank at Farley's dock at Sayreville, March 6th, just before the boat was to leave for New York. The boat had arrived at Sayreville the early part of the week.

ACCIDENTS, DAMAGES AND LOSSES

P. B. Broughton & Co., Bradford, Pa., has filed a voluntary petition in bankruptcy.

The Leavenworth (Kansas) Brick Co., is a bankrupt, and creditors meetings are called for this month. T. O. Carter is referee in bankruptcy.

Robert Conrad was buried in the clay bank of the Zeigler & Shankel brick yards at Pennsburg, Pa., and narrowly escaped death by pressure.

Two employes of the Ohio Brick & Clay Co., Cleveland, Ohio, were buried in a cavein at the company's yard. Both are now in the St. Alexis Hospital.

Trouble between the black and white workmen at the plant of the Yoke Vitrified Brick Co., Coffeyville, Kansas, resulted in one of the blacks using a gun on the white men.

The federal judge has appointed J. P. Degnan of Toledo, Ohio, receiver for the Logan (O.) Brick Manufacturing Co. The petitioners claim the company owes nearly $300,000.

Application for the dissolution of the Bartlett Brick Co. that owns brick yards valued at $300,000 at Roseton and Hudson, N. Y., have been filed by President Frederick W. Bartlett.

The Somerset Brick Co., New Lexington, Ohio, has gone into the hands of a receiver. The company has assets to the amount of $8,000 and liabilities to $12,000 is claimed by one, Perry D. Randolph.

Augusta Knuth is suing the Charles T. Burnham Co., Milwaukee, Wis., brick manufacturers, for $5,000 damages for the death of her husband, who was killed four years ago by one of the brick walls falling upon him.

Suits have been filed against the Altamaha Brick & Tile Co., Brunswick, Ga., to the amount of $6,964 by a dozen or more creditors. Col. C. B. Conyers the president, advises that the concern is solvent and will take care of the creditors.

Two judgments were entered against the Rossville Brick Co. of Rossville, Staten Island, N. Y., for over $30,000 in favor of John H. Mahnken, the vice-president. Henry Meyer is the president and John E. Sparrow the treasurer. The New York office is at 15 Whitehall street.

TO FORM A NEW BRICK EXCHANGE

A meeting of the brick manufacturers of New Britain, Conn., was held recently at the office of the Federal Brick Company in Church street, for the purpose of reorganizing the exchange.

The brick men have separated from the Providence promoters who formed the Federal Brick Company two years ago, as the latter were unable to deliver the goods in the form of the original agreement, partly beause of the general business depression that hit the country and partly because their original estimate of what the company could do if it controlled the output of eighty millions of brick was too enthusiastic.

The plan favored by the brick men is to form again the exchange on the plan that was carried along so successfully by the local brick manufacturers for several years. This was conducted under the name of the Central Brick Exchange.

PACIFIC COAST NEWS ITEMS

Since the clearing of the weather some three weeks ago building operations in San Francisco and all along the coast' have been resumed on a large scale and there is now more work in this line than has been noted at any one time since the commencement of the financial disturbance a year ago last October. From the plans now in the hands of architects and from the extent of the buliding permits that have been issued in past months and upon which no work has as yet been done on account of weather conditions, it is believed that construction work in the near future will come close to equaling the record set immediately after the great fire when conditions were in such an abnormal shape. While but few of the brick yards and pottery plants have been working on full time during the past few months and many of them not operating at all, in fact, manufacturers have not been wasting their time and preparations have been made for a heavy summer's run on the lines that appear to warrant it. Many of the plants have remodeled their equipment and almost without an exception have adopted the standard sized brick that was recommended some months ago. There is still quite a large stock of various size brick still on the market, but the new standard is being turned out now by most of the plants in operation. Another very important matter that has been under consideration here of late is that of standardizing the terms used by archiects in their specifications. Heretofore the different potteries have each taken their own views on the meaning of architects' specifications and considerable confusion has resulted from the various interpretations that have been placed upon the different terms used. While no definite settlement has been reached as yet in this matter it is worthy of notice that an attempt is being made to come to an understanding and it is probable that an agreement will be reached by the manufacturers of terra cotta. The makers of common brick are now receiving a better price for their product than has been the case in the past sixteen months. The average price on this article for some time has been $8.50 per thousand on the cars at San Francisco, and this has now been raised to $9. As the standard size of the brick has been cut much smaller than those that had been made by most manufacturers, there will be an additional saving in this respect as well.

In spite of the fact that the test of vitrified brick that was made by a prominent manufacturer on the streets of San Francisco proved to be a failure, there are several makers of that article who now claim that they have improved their product to such an extent that they are confident that this material will now stand the test and it is likely that another trial will be made within a short time. An agitation is being made in Oakland to have a test made there also, and if these tests are successful many of the Bay cities will put in pavements of this character for asphaltum is now increasing in price and is extremely short-lived as a material for paving purposes where there is heavy traffic.

Competition was very keen for the furnishing of the brick to be used in the new City Hall at Sacramento, but this was settled this week by awarding the contract to the Thompson Starratt Co., which also secured the contract for the construction work. Pressed brick and terra cotta will be largely used.

The Carquinez Brick Company which has offices in San Francisco, and which operates a large plant across the bay, has announced its intention of installing machinery sufficient to practically double the presnt capacity of the plant. This will make it one of the largest manufacturers of brick in this section of the state.

The plant of the California Pressed Brick Company at Pleasanton, Cal., was closed during the rainy season, but has now opened for operations again and is turning out from 30,000 to 35,000 brick each day. Work is now being resumed on the enlargement of the plant and it is anticipated that by the first of July the new kilns will be ready and the capacity of the plant will then be doubled. The manufacture of paving bricks will commence within the next few days, a repress machine now being placed in position.

The Steiger Terra Cotta and Pottery Works has just received a contract for the furnishing of the terra cotta to be used in the new Y. M. C. A. building now in course of construction on Golden Gate avenue. The material is to cost over $11,000.

The work of tearing down the old City Hall in San Farncisco has been stopped by injunctions secured by citizens who are in favor of repairing the structure. Plans are being drawn up for a new structure, however, and one to cost $4,000,000 is now under consideration. It will probably be a long time before work on this structure can be commenced, however.

The Burnight-Kennedy Co. of Oroville, Cal., has been appointed selling agents for the product of the Oroville Brick Company which is operating a plant at Chandon, near that place.

The Alta Tile Company of San Francisco has secured a site for a warehouse at Brannan and Sixth streets.

A brick yard has just been opened at El Centro, Cal., by J. S. Blackington.

C. F. Pratt, manager of the Golden Gate Brick Company states that his firm is now commencing to deliver brick to the new Altonheim building in Oakland.

The Marysville Sand, Cement and Brick Co. of Marysville, Cal., is preparing to erect a large plant at that place and are now negotiating for a suitable location.

The Spokane Asbestos Fire Brick Company, operating near Spokane, Wash., expects to have a large plant in operation this spring. The plant is to be located near a small town named Kamian.

The plant of Miller Bros., at Bellingham, Wash., are now adding much additional machinery to their plant at that place and have made plans for turning out 3,000,000 bricks during the summer season.

The Holmes Lime Company of San Francisco states that the market for fire brick is in a splendid shape at the present time and that within the past six months it has marketed a million brick made by the Ione Fire Brick Company. It is stated that the entire output of this plant has been taken for six months in advance.

HEALTHFUL AIR

"The problem of securing comfort and health in inhabited rooms is four-fold in its character. Not only must air be supplied in ample quantity to overcome the effects of vitiation but its temperature and its humidity must be regulated and dust must be prevented or disposed of. No system of ventilation and heating is complete or can operate satisfactorily in which consideration has not been given to all these factors. Attention has long been given to the control of ventilation and temperature. But interest is only just awakening to the almost equal importance of regulating humidity and removing dust.

Air is vital to the preservation of life and health. Its purity is a direct measure of the physical well being. It has been calculated that an average individual inhales 20,000 gallons of air in twenty-four hours or about 34 pounds in weight—as against 5½ pounds of food, both liquid and solid. We should, therefore, even more carefully scrutinize the air we breathe than the food we eat to see that it is not adulterated. But the latter is visible and its quantity easily determined; the former is invisible and intangible. The digestive organs have, furthermore, the faculty of selecting the good and rejecting the bad, but the lungs, which are infinitely more delicate and sensitive, have far less selective power. Whatever quality of air is inspired must pass through them before it is expired. Insufficiency in quality must be made up by an excess in quantity.

The proportion of carbonic acid—the primary product of respiration—has long been recognized as an index of the quality of the air. But it has been a matter of discussion whether the ill effects of air containing a large proportion of this gas were due directly or only indirectly to its presence. By some experimenters it has been asserted and apparently proven that the exhaled breath contains a poisonous compound—inoculation with which might even produce death. The best opinion now seems to be that the injurious effects of air high in carbonic acid are due almost entirely to the decreased quantity of oxygen and not to any poisonous organic matter from the lungs. But vitiation, resulting from insufficient ventilation, is almost universally accompanied by increased temperature. The primary cause of discomfort is, therefore, two-fold, resulting as it does from decrease of oxygen and increase of heat.

But this by no means indicates that no other harm may exist in expired air or that the requirements of good ventilation may be satisfied by merely supplying a specific volume of air to dilute that vitiated by breathing and to thereby limit the percentage of carbonic acid which may be present.

The quality of air is also measured by the presence of minute particles of dust which may either be directly harmful in themselves or may serve as carriers of yet smaller particles or micro-organisms, which may be objectionable not only because of the amount of dirt they represent but because of their physiological effect. In either form this dust may and usually does include bacteria which may form the really dangerous elements in the air." From treatise on "Healthful Air," published by the New York Blower Company, Chicago, Ill.

THE SHACKLEFORD COMPANY WILL SPEND $100.000.00

Trebling its capital and increasing its output four-fold, the Shackleford Brick Company plans to erect in Des Moines, Iowa, the largest and most modern exclusive brick plant in the state. At a meeting of the board of directors it was decided to add $100,000 to the $50,000 capitalization and to employ the entire sum in improving the present works. It is expected that work will begin at once on the installation of a huge continuous kiln. In addition new engines and other machinery will be purchased.

The continuous kiln will have dimensions of approximately 200x50 feet. Its capacity will be 75,000 brick daily. Its brick will be dried and burned in the same kiln, being carried into it from the molding and cutting machines by an endless chain belt. The surplus heat from the burning kiln will be carried into the other chambers in which brick are placed for drying and all will be utilized continuously. There will be thirteen chambers in the great kiln and brick will be drying and burning constantly.

The officers of the company declare that not only will the improvement save time and cost, but that it will produce a better quality of brick than the old style kiln.

The company will continue the operation of its present plant at full capacity, erecting the new kiln and placing machinery on other ground adjacent.

President F. W. Shackleford and Superintendent F. W. Stewart recently returned from an extensive trip in the east, during which they visited scores of the most modern brick making plants to secure ideas for the improvements here.

It is declared by Mr. Shackleford that the outlook for a growing demand for brick was never better and he believes that all the local plants will be pressed to full capacity to fill orders. He says there is room for both brick and cement and that each industry is destined to grow because of the scarcity of lumber.

BRICK TRADE GOOD AT QUINCY

Business with the brick industry in Quincy, Illinois, bids fair to be very satisfactory this year. Quincy has always been a large brick producing point and it seems to be the policy of these manufacturers to improve on their product, as well as to keep up with the modern methods of manufacture.

The market price will hardly be changed one way or the other this season. It costs more for labor these days, and as the demand is improving, manufacturers see no reason for reducing prices.

John Hummert, manager of the Gem City Pressed Brick Co., stated when questioned about business, that his plant would be in operation again in about a week. They have some advance orders and the outlook is encouraging. At present the plant is furnishing brick for three buildings in this city to say nothing about orders being received from out of town.

Damhorst Brothers see a good year ahead and are equipped to take care of increasing business, having made extensive improvements within the last year or so.

W. K. Abbott says he is doing some business in a wholesale way and is shipping some stock out of town.

HARBISON-WALKER REFRACTORIES COMPANY SECURES INJUNCTION TO RETAIN W. A. STANTON FROM SELLING

Judge J. J. Miller, specially presiding in common pleas court No. 2, Pittsburg, Pa., handed down an opinion holding that when a contract is entered into between two parties that the contract is binding upon both.

The decision arose over the suit in equity of the Harbison-Walker Refractories Company against William A. Stanton. According to the testimony, Stanton, who was president and majority stockholder of the Basic Brick Company of Johstown, agreed to sell out to the Harbison-Walker Company the entire plant of his company for $300,000. In addition to that he agreed not to manufacture or sell silica or clay fire brick in Pennsylvania, Kentucky, New Jersey, Maryland and Ohio for a period of fifteen years from July 1, 1902.

Mr. Stanton was given a position with the Harbison-Walker Company, as sales agent, his salary being fixed at $12,000 a year, which was later increased to $16,000. He remained with the company until January, 1908, when his resignation was demanded and given.

After he had retired from the service of the company, it was alleged, he engaged in the business of sales for a number of independent concerns, going over the territcry and seeing customers in the five states in which he had agreed not to see, and that he disposed of at least 20,000,000 brick, valued at $360,000.

Judge Miller finds Stanton violated his contract and grants the injunction asked for, restraining him from manufacturing or selling his products embraced in the above territory, and ordering the defendant to pay the costs.

THE ATHENS WHISTLE A WELCOME SOUND

After a shutdown of two months the huge plant of the Athens (Ohio) Brick company began operations again. Two months ago an accident in the engine room caused the plant to cease operations. A large engine was badly damaged, and while it was being replaced the management of the company decided to install other new machinery.

Accordingly, at a very large expense, a new 400-horse power Corliss engine, two new boilers, a new machine shop, a new dry pan, a new giant press, and another double repress were installed. In addition, six new kilns were added to the yards, three of which are now finished. The old engine, which furnished power for the plant for years, will be used to drive the generator.

The capacity of the plant is now 80,000 brick per day. In addition, from thirty to forty more men will be added to the list of employes, bringing the total to between 140 and 150 men who receive employment daily at this plant.

The blast of the new whistle of the Athens brick plant is now a most welcome sound to hundreds of ears. Many of the men had nothing to do during the two months, but a number of them were given work at the plant while the repairs were being made.

TWO MEN HURT IN CLAY BANK

Two employes of the Ohio Brick and Clay Company were buried when a clay bank caved in at the company's yards, Warren road and the canal, Cleveland, O. The son of one of the victims led the rescuers, who dug out the two men.

The men caught in the cave-in were George Farrar, foreman, and Frank Lawrence, laborer. Both of these men are now at St. Alexis' Hospital, where they were taken in Glasier's ambulance.

Farrar was in charge of a gang of three men engaged in digging clay with a steam shovel in the side of a bank. Suddenly clay above the excavation began to fall. There was a shout of warning, but Farrar and Lawrence were unable to escape. Farrar was completely buried under several tons of earth, a big boulder resting on his chest. The two men who had escaped summoned other workmen. Among these was George Farrar, Jr., the twenty-one-year-old son of the foreman.

Lawrence's head was seen above the clay, but there was not a sign of Farrar. The son seized a shovel and worked over the spot where his father was buried. Within fifteen minutes both men were in the open air. Farrar's hip was broken, his face lacerated and where the boulder rested upon his chest, two ribs were broken. Lawrence's left leg and shoulder were broken.

LESS BRICK ON HAND IN AGGREGATE NOW THAN AT THIS PERIOD LAST YEAR

Investigation of the amount of brick in manufacturers hands along the Hudson by President William K. Hammond of the Hudson River Manufacturers' Association, discloses a smaller quantity in the aggregate than at the corresponding time last year, but considerable more than was usually reported annually in previous years. Mr. Hammond says there is plenty of brick for all demands; that manufacturing will be resumed early in the spring, and any apparent shortage then will be more than made up in the early part of the season.

Quotations for Hudson River common brick are now on a winter basis. The river is closed to navigation north of Rockland Lake, leaving the nearest shipping point for brick inaccessible. The available stock in the market is considered ample to supply the demand until navigation shall be resumed. Quotations are nominally from $7 to $7.25 for material from covered barges, but only a few sales so far been reported in which the higher figures were obtained.

JACOBY BACK WITH HYDRAULIC CO.

Theodore C. Jacoby has resigned his position as manager of the Boone (Iowa) Brick, Tile and Paving Co. and has accepted one as assistant general manager of the Hydraulic Pressed Brick Co. at Kansas City, Mo. Mr. Jacoby was formerly with this company in St. Louis, having worked with them for seventeen years.

ARKANSAS CLAYS, BY PROF. BRANNER

The Department of the Interior, United States Geological Survey, has issued a bulletin on "The Clays of Arkansas," by John C. Branner, who was a geologist of Arkansas. The bulletin states that the work was not printed in Arkansas because no appropriation was made for printing it, and Professor Branner offered the work for publication as a bulletin of the United States Geological Survey.

The bulletin is in four chapters. The first takes up the topography and geology of the state in a general way. The second, the character, origin, occurrence and uses of Arkansas clays; the third, the geologic age and geographic distribution of the clays; fourth, the clays as found in the several counties. The book has 247 pages, to which is attached a geological map of Arkansas.

The bulletin says:

"The northwestern edge of the tertiary beds crosses Pulaski county two or three miles northwest of the Iron Mountain railway and keeps about parallel with it from Little Rock toward the southwest. Northwest of this tertiary margin, the rocks of the county are much folded and are either silurian or carboniferous, while toward the south and east they are nearly horizontal and are tertiary and quaternary. The granites or syenites of the Fourche mountain region are of earlier age than the tertiary sediments to the south and east. They furnish the kaolins of Pulaski county, and have also probably been the source of much of the valuable clays of this and adjoining counties."

The clays of Pulaski county are discussed by districts, the districts being Fourche mountain, Mabelvale, Little Rock and McAlmont.

"At several places in the city of Little Rock the folded Paleozoic rocks may be seen standing almost on end," says the report. "The famous 'Little Rock' itself, on which rests the south end of the railway bridge at the foot of Rock street, is a folded and wrinkled Paleozoic bed.

"One of the best sections seen near the center of the city was exposed when the excavations were made for the Masonic Temple on the corner of Fifth and Main streets in June, 1890.

"C. E. Siebenthal, while in the employ of the Arkansas Survey, collected many data regarding the geology of southwestern Little Rock. He is of the opinion there are four pretty constant and well-defined beds in the series of sediments resting upon the paleozoic rocks."

The joint chocolate and bottom clays of the Little Rock district are discussed at length. The chocolate clays are found only in remnants or patches in various parts of the district.

"At the Union depot in Little Rock the chocolate clay forms the surface of the flat bottom of the cove on which the depot is situated. It has here a thickness of two or three feet. When the chocolate clay is washed, it makes a smooth paste of uniform color. This may probably form a good base for the manufacture of some classes of terra cotta ware, but great care must be taken to see that it is dried at a uniform rate all over the work, as otherwise the clay has a tendency to break into small blocks.

"The bottom lands that lie along Fourche Bayou and form Fourche Island are overlain in many places by a dark bluish clay. This clay is comparatively free from sand and is very tough. When worked properly, it may be used for making a good grade of pressed front or ornamental bricks and may possibly be used for the manufacture of ordinary drain tile. In working this clay, considerable attention will have to be paid to its proper mixing and tempering, and also in drying of the bricks or tiles after they have come from the machine. This clay will work better and easier if dug in the fall and worked over during the winter preparatory to summer manufacture.

"The various kinds of clays found in Pulaski county include the kaolins of Fourche mountain, pottery clays, clay shales suitable for the manufacture of paving bricks and fire bricks, and the more common surface clays suitable for the manufacture of common bricks. Common brick clay is the only clay now used, and Little Rock the only place where it is manufactured into bricks."

The latter statement is applicable only to Pulaski county. Each county in the state is taken up in the book and its clays and manufacture discussed.

A NEW TECHNICAL CONCERN

A card is out announcing that Charles W. Franzheim & Son, Wheeling, W. Va., have opened a brokerage office for the purpose of handling certain supplies for the pottery, glass and kindred trades, and have likewise installed a complete chemical laboratory for the analysis of ceramic materials. This will fill a long-felt want, the firm being the first to establish a business where the trade is free to apply for expert, practical and technical information and advice. Charles W. Franzheim has for years been actively engaged in the pottery business, and is well and favorably known; while his son, C. Merts Franzheim, has been thoroughly educated in the technical department, having undergone a ceramic training at the Ohio State university and the technical schools of Germany. This practical and technical experience combined should qualify the new firm for a successful career.

THE SIZE OF TILE TO USE

The size of tile to be placed in a drain will depend upon the length of the drain, the depth and the distance apart, the fall, character of the soil above, and the maximum amount of rainfall to be provided for in a given time. The rate at which water will flow in a tile of given diameter, with a given grade, and the amount of water likely to reach the drain in certain extreme circumstances have been made the subject of careful investigation, so that the following relations may be confidently stated: A 2-inch tile will drain two acres, but should not be laid in a drain more than 500 feet long; a 3-inch tile will drain five acres, but should not be more than 1,000 feet long; a 4-inch tile 12 acres, a 5-inch tile 20 acres, a 6-inch 40 acres. These rules apply primarily to mains and submains. For laterals the limits as to length above stated will apply, provided there is a good fall. Where the fall is slight a larger size of tile is to be preferred.

MISCELLANEOUS ITEMS

The Gettysburg (Pa.) Brick Co. has sold its plant to the Auburn (Pa.) Shale Brick Co.

The Columbus (O.) & Hocking Coal & Iron Co. is now building a new continuous kiln of very large capacity at its plant at Kachelmacher.

William E. Goeltz of Bradford, Pa., is investigating the clays of Little Rock, Ark., and vicinity with a view of starting a terra cotta plant there.

Fred Plegmann will remove his brick works to Waurika, Okla., and place it in the Talley addition at the instigation of the chamber of commerce.

The Hanover (O.) Pressed Brick Co. recently elected C. H. Farry president and general manager, W. H. Smithe, secretary, and C. C. Forry, treasurer.

William Simon has decided to establish a brick yard at Elbow Lake, Minn., and will remove his brick yard from Ashby, so as to get onto the Soo Line.

J. J. Sikes & Co. have organized a company to manufacture brick at Houston, Texas, for the local market. The company has seven acres of clay on the Bayou.

It is said that the Montello Brick Co., Reading, Pa., will start their plants about the first of April. They have been leased by the Montello Brick Works for some time.

The Lansing (Mich.) Brick Co., has reduced its capital stock from $50,000 to $25,000, fully paid up. The concern has its plant in operation and a good business under way.

H. H. McHose of Grinnell, Ia., is the superintendent of the Billings (Mont.) Pressed Brick Co. for this year. He belongs to a family of brick makers and assures success to the plant.

The Alabama Brick & Tile Co., Hollywood, Ala., has been organized to make drain tile. E. J. Neher is president, W. J. Matthews, vice-president, W. B. Neher, secretary and treasurer.

The Brownswood (Texas) Brick Co. will construct new kilns, build a siding into the works and put up a brick office. H. W. McGhee is the manager and J. D. Fay the superintendent of the plant.

The Roanoke Drain Tile Co. of Huntington, Ind., has been incorporated with $12,000 capital stock. The directors are B. F. Zant, P. B. Sattlemyre, A. D. Wasmuth, F. C. Chenneour and H. E. Chenneour.

The Red River Valley Brick Co., Grand Forks, N. D., have purchased a Thew steam shovel and is building a side track into one of its yards. The company is planning for a record breaker for this year.

The Empire Brick Co., Alamogordo, New Mex., has been incorporated with $50,000 capital stock. Incorporators are M. H. Fisher, C. S. Foust and Albert Carter. They will make 20,000 pressed brick daily.

The Wilson Kiln & Dryer Co., West End Trust Building, Philadelphia, Pa., have built kilns for the C. P. Mayer Brick Co., at Bridgeville, Pa., and the Punxsutawney Brick Co. at Punxsutawney, Pa., both of which are very satisfactory. Cuts of the Wilson kilns can be seen on page 45 of this issue.

Johnson & Johnson Co., Raleigh, N. C., will install a steam shovel and is planning to make 10,000,000 brick this year.

The property of the Montgomery (Ala.) Brick & Tile Co., has been purchased by James and John McIntyre, the consideration being $27,000.

The Oblong (Ill.) Manufacturing Co., have leased their brick works for cash rental to R. S. Higgins of Milmine and William Baugus.

The Blandon Clay Co., of Camden, N. J., has been incorporated with $50,000 capital stock. Incorporators are: J. F. Davis, G. R. Gilkyson and F. C. Barton.

The Calhoun Brick & Clay Co., St. Louis, Mo., will increase their capital stock from $200,000 to $260,000 and increase the number of directors from five to seven.

After a shut down of several months the plant of the Athens (O.) Brick Co. began operations. A new 400 h. p. Corliss engine, two new boilers, a new machine shop, a dry pan and two represses were installed, besides adding six kilns to the yard. The capacity of the plant is over 80,000 daily.

The Shackleford Brick Co., Des Moines, Ia., has increased its capital stock from $50,000 to $150,000 and will use the increase to improve their plant. A new 75,000 daily capacity continuous kiln will be built, and a modern equipment installed. J. W. Shackleford is president, George Yarn, vice-president; Charles Worth, secretary, and Fred W. Stewart, treasurer and manager.

DIRECT HEAT

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American Process Co.,
68 William St. NEW YORK CITY

The Planters' Industrial Institute, Delhi, La., will establish a brick manufacturing plant.

The Clymer (Pa.) Brick Co. has purchased additional machinery so as to keep up with the demands for their product.

The farm of John and Philip Cox of Mill Run, Pa., has been optioned for an Ohio concern expecting to start a brick plant.

The Benson Brick Co., Cohoes, N. Y., has filed with the state court of claims a claim for $6,000 for land taken by the barge canal.

The Scranton (Pa.) Vitrified Brick & Tile Co., which suffered the loss of its plant at Nayaug by fire, has decided to rebuild at once.

George Keiser has bought the brick yard from Josiah H. Fisher at Tipton, Pa. He already has orders and will begin operations at once.

James E. Meek, a Chillicothe, Mo. contractor is planning to build a paving and building brick plant in that city. Suitable shale is found there.

Denver, Colo. contractors have given orders to the Berthoud (Col.) Brick Co. for 2,000,000 brick for the military buildings at Fort Russell, Wyoming.

After two months shut down the Tipton (Ia.) Brick & Tile Works has started up. E. Wilson, the proprietor, says it will be the banner year for them.

The Valleyford (Wash.) Brick & Tile Co. has leased the brick plant at Rockford, Wash. and it is now being put into shape. Charles Pike is the foreman.

The S. Barnes Brick Co., New Brighton, Pa., has received an order for 1,500,000 stove brick from an Ohio concern, to be shipped at the rate of two carloads per day.

The Barnum (Minn.) Brick & Tile Co., has been incorporated with $50,000 capital stock. Incorporators are: W. F. Mackey of Stillwater, and S. and J. M. Sounty of Barnum.

The Twentieth Century Clay Products Co., Cleveland, O., has been incorporated with $300,000 capital stock by C. L. Morton, A. M. Moore, S. F. Moore, D. H. Tilden and E. G. Derr.

The Keystone Brick & Clay Co., Fogelsville, Pa., recently elected the following officers: S. J. Kistler, president; F. E. Lewis, vice president, and E. J. Lichtenwalner, secretary and treasurer.

The C. A. Riffle Co., Aspinwall, Pa., has been incorporated with $5,000 capital stock by Geo. R. Walker, of Pittsburg, C. A. Riffle of Aspinwall, Charles H. Good of Manor, and Geo. Rilchenstein, Pittsburg.

The Wilkesbarre (Pa.) Brick Co. has been incorporated at Wilmington, Del., with $100,000 capital stock. Incorporators: B. A. Reed, Geo. W. Gotthold, Wm. H. Amesburg, D. H. Evans, all of Wilkesbarre; J. Morris and Abraham D. Thomas of Edwardsville, Pa.

The Penn Company, New York, has been incorporated with $5,000 capital stock, to manufacture fire-proofing and brick, by Paul Kieffer, 120 E. 17th street; F. W. Cameron, 209 Edgecombe avenue; Wm. Ferguson, 215 W. 23d street, and Joseph Beasley, Jr., 655 McDonough street, Brooklyn.

The Alvin (Texas) Brick Co. has reduced its capital stock from $50,000 to $26,000.

Ed. Fresch of Middletown, Ohio, has purchased a 65,000 capacity brick machine and will install it in his yard as soon as possible.

The Manteno (Ill.) Brick Co. has started operations for the season with 80 men. They will make 200,000 brick daily at the plant.

E. M. Lewis of Anniston, Ala., will establish a $50,000 brick plant at Wallett, Okla., as a result of a visit to that city some time ago.

L. L. Dirting and F. H. Robins will establish a brick plant at North Mountain, W. Va., that will make 100,000 brick daily and cost $100,000.

Ed. and Rudolph Fisher of Lone Rock, Ia., have gone to Des Moines, Iowa, where they have interested themselves in the manufacture of brick.

The Frisch Brick & Tile Works at Mt. Pulaski, Ill., has started up after being removed from Mt. Pleasant street to South Spring street and being entirely rebuilt. The capacity is now much larger.

The Illinois Terra Cotta Lumber Co., 439 Rookery Building, Chicago, Ill., have just issued their 1909 catalogue on Hollow Tile Fireproofing. It includes all kinds and forms of fireproofing that is made by this well known company.

The Nelson Vitrified Brick Co. has been changed to the Parsons Vitrified Brick Co., and the main office removed to Parsons, Kansas. H. W. Raber is president and general manager, H. F. Reid, secretary, and Kirby Barton, treasurer. W. T. McClung is an agent.

SAND OR LIME BRICK OR BLOCK NEWS

Courtland, Arizona, is to have a cement brick works.

The cement tile factory at Shabbona, Ill., will add several new machines to their plant.

Grand Mound, Iowa, is to have a cement tile factory, to be built by Gustav Ahlff & Son Co.

The Greenville (Miss.) Tile & Cement Co., has been incorporated with $30,000 capital stock by Leroy Percy, J. H. Crouch and H. C. Homrighouse.

F. C. Mearne, of the West Side, New York, connected with the dried fruit business, is now devoting his entire time and treasurer, and George J. Stites, superintendent. They Long Island, N. Y.

J. C. Rowe, of the Bickford Brick Co., Bellefonte, Pa., has perfected a process for the manufacture of brick from slag and cement. They have organized the Bellefonte Concrete Slag Brick Company.

The International Sand-Lime Brick & Machinery Co., of New York, have sold the rights of the "Division Method" for Australia, to a syndicate of Melbourne capitalists who will erect a string of factories in all parts of Australia.

The Columbia Silica Co. of Portage, Wis., has let their contract to build their sand-lime brick plant to the International Sand Lime Brick & Machinery Co., of New York City, N. Y. A. J. Calkins is the general manager. We will describe this plant later.

The Sunflower Silica Land & Manufacturing Co., has been organized at Wichita, Kansas, with $65,000 capital stock. Directors are, A. C. Houston, A. A. Hyde, W. F. Bort, W. H. Bretch, J. O. Davidson, A. H. Hill, E. E. Carter, J. F. Bort, George Theis, Jr., W. S. Kilmer and others.

The Silicate Manufacturing Co. which has its works near Honey Brook, Pa., is now making preparations to manufacture silicate brick. The officers are Andrew Carty, president; R. T. Fifert, vice president; W. C. Martin, secretary and treasurer, and George J. Stites, superintendent. They will make brick under the "Division Method."

CASH

For your Real Estate or Business. No matter where located if you want te buy, sell or exchange any kind of business or real estate anywhere at any price, call on or or, address,

FRANK P. CLEVELAND
1725 Adams Express Building,
Chicago, Ill

HELP WAFTED

Wanted a head burner for a paying brick plant in Iowa.
Burner, care Clay Record,
Chicago, Ill.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

Two, Three and Four-Mold Presses. Stiff mud auger machine. Pug mill and cutter. One pulverizer and one mixer. Two small engines. Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

Southern Brick & Tile Co.
Louisville, Ky.

MACHINERY WANTED

I am in the market for the purchase of 12 cylinders, 6 ft. 2 in. in diameter by 40 feet long: also a large number of hardening cylinder brick cars.

Address COLBY M. AVERY, Aurora, Ill.

20,000 WOODEN PALLETS

Will be sold cheap, size 10 in. by 32 in. and 3½ in. leg. Address

JASPER ADAMS.
Battle Creek, Mich.

ARE YOU LOOKING FOR A SNAP

On April 1st at 2:00 p. m., I will offer for sale to the highest bidder the plant known as the Superior Brick and Tile Co., a complete plant with 16 acres of rich clay land. Twenty million brick will be used in Lima alone in the next two years. Reason for selling, stockholders cannot agree. Address

WM. F. BUMAN,
311 Masonic Bldg., Lima, Ohio.

FOR SALE

Vol. 1 of Sager's Collected Works. Book is in splendid condition. Price only $5. Answer at once.

Book, care of Clay Record,
Chicago

FOR SALE
SECOND HAND MACHINERY

Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2½ in. to 1½
One McGowan & Co. 6 in. to 6 in.
One Blake 6 in. to 6 in.
One Erie Engine 75 h. p.
One No. 7 Dean 4in. to 6 in.
One Blake 3 in. to 4 in.
Two Cameron 3 in. to 4 in

Three Centrifugal pumps 4½ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in. Buffulo Force Fans. One Stutervant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill One No, 2 and No 3 Mead Mill. Four 32 in. and one 42 in. Munson Mills.

The above machinery has been used only a short time.

S. KRUG WRECKING CO.
Nebraska City, Neb.

FOR RENT

The Mendota Brick and Tile plant to rent on easy terms. Good home trade and shipping trade over three railroads Apply at once to

Mrs. Wm. Stare,
Mendota, Ill.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail. at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

BRICK MACHINERY FOR SALE CHEAP

One—125 H. P. Atlas Engine.
Two—80 H. P. Atlas Boilers.
One—9 foot Raymond Dry Pan.
One—No. 77 Raymond Brick Machine.
One—Raymond Rotary Cutting Table.
One—10-ft Raymond Pug Mill.
One—2 Cylinder Steam Hoist.
104—Steel Frame Dryer Cars with iron pallets.
Two—Transfer Cars, six tons, 12 lb. rails.

Five acres of good brck shale and cheap natural gas. Good reasons for selling.

Address: P. O. Box 206
Iola. Kansas

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Beusing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32,000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12,000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address

J. M. CRABILL
Clarinda, Iowa.

FOR SALE OR LEASE

Good soft mud brick plant in city of 10,000 in Indiana; capacity 25,000. Will be sold at a bargain on easy terms; good reasons for selling. Address

R 5, care Clay Record,
Chicago, Ill.

FOR SALE

A Wellington Brick Machine, two-horse power, soft mud. Also 3000 or 4000 brick pallets. Address

August Chevraux,
Louisville, Ohio

WANTED

Experienced brick setters and shaders. Steady employment. Give experience and reference, also wages expected.

J. A. Topping,
95 1st Avenue Columbus, Ohio

WANTED

Second-hand, two or four-mold dry-press brick machine. State condition, where located, and lowest cash price; also name of manufacturer, when bought, and amount of brick made or how long used. Address

Dry Press:
care Clay Record, Chicago, Ill.

CLAY AND COAL FOR SALE OR LEASE

Have 1,500 acres of the celebrated Carter Co. fire clay and coal land to sell very reasonable or lease on royalty. Three veins of fire clay and one three and one-half foot of coal in same hills at Denton, Ky., on line of two railroads.

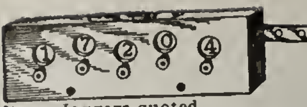
Fine prospect for oil and gas.

Address: J. H. BURDETTE,
622 West Caster Ave.,
Ashland. Ky.

BOOK WANTED

Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

Book, care Clay Record,
Chicago, Ill.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART. 41 White St., BATTLE CREEK. MICH

FREE Most favored harbor on Columbia River. Natural deep channel —no Dredging—no Ice—no Floods **FACTORY** 60 miles from Ocean Same freight rates Seattle and Portland. Unlimited **SITES** raw material—varied timber resources. Furniture, Finish and Pulp Woods—finest Pottery Clay. Ideal location for manufactures. No "hot air" schemes **RAINIER** will be considered. For more detailed information write to **OREGON**

L. S. THOMAS
RAINIER
OREGON

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machine; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio.

Address A. B. care Clay Record,
Chicago, Ill.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR TRADE

Well equipped brick and tile plant in central Iowa. Everything complete and ready for business. Plant cost $20,000 and will pay good dividend at that figure. What have you to offer? Will conider good land (prefer clear land as plant is unencumbered) in exchange. Give legal description, price and fullest particulars in first letter.

Address Owner,
Box 253, St. Paul, Minn.

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana,"
Care Clay Record, Chicago, Ill.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14½x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street Cincinnati, Ohio

VON OVEN COMPANY

Frederick W. von Oven, Manager

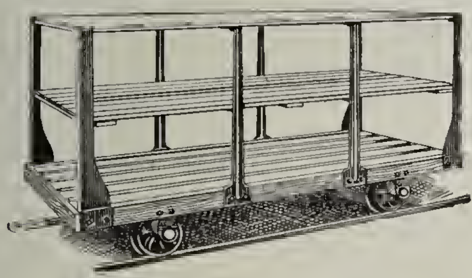
Consulting and Contracting Engineers

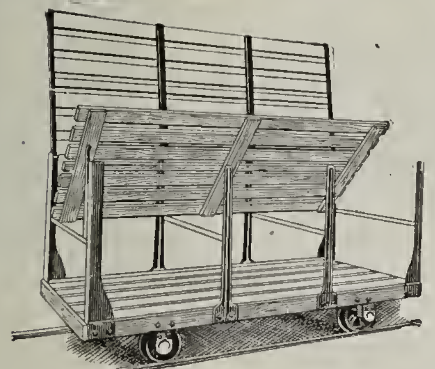
Gas Producer Installation.
Furnaces and Kilns.
Filter Presses.
Steel Mill Building Construction.
Designs for Special Constructions.
Von Oven Marking Device for
Green Clay Articles.

135 Adams Street, Chicago, Illinois
Room 1102

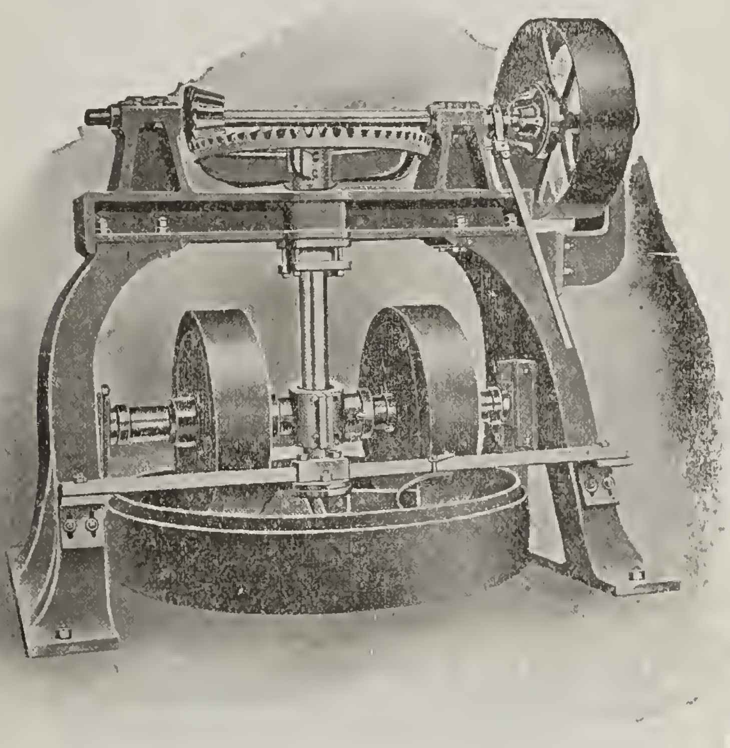
The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA



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BUILDERS OF

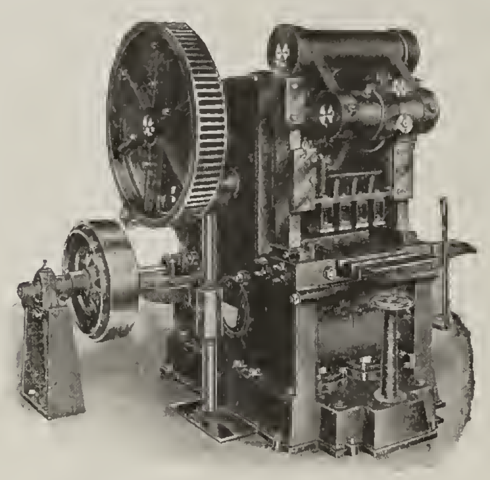
Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

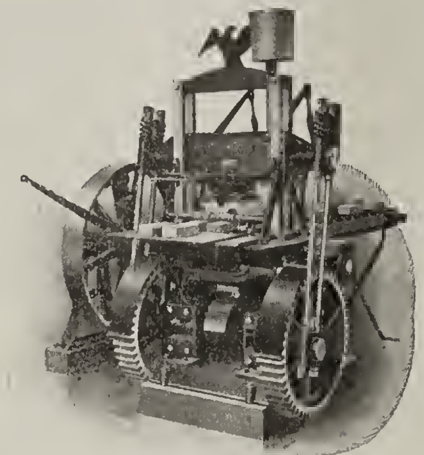
ROCK AND ORE CRUSHERS

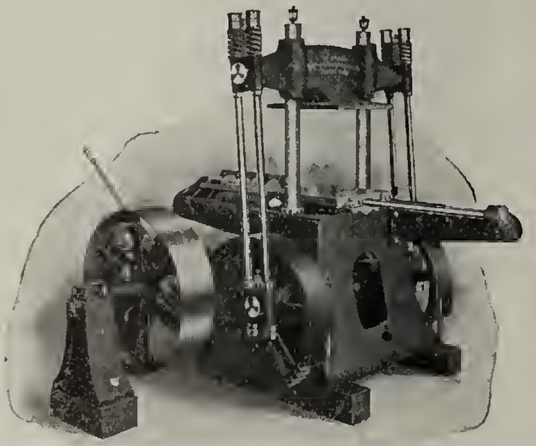
When writing for prices state kind of material and capacity required.

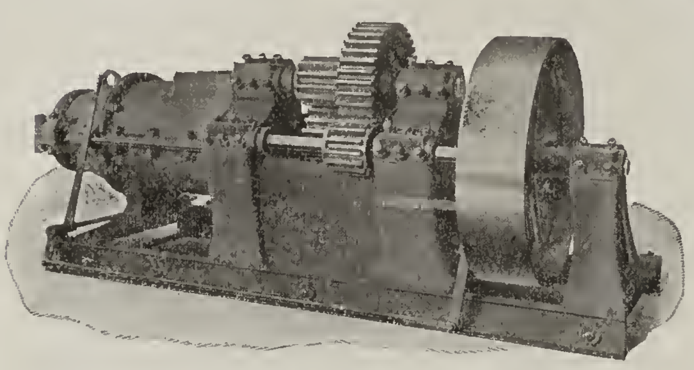
Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

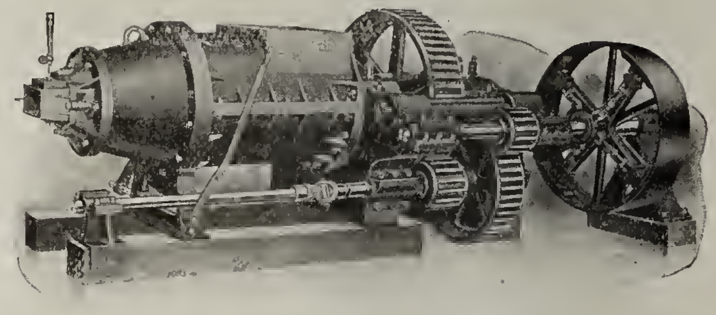
THE AMERICAN CLAY MACHINERY COMPANY
BUILT RIGHT RUN RIGHT
BUCYRUS OHIO, U.S.A.

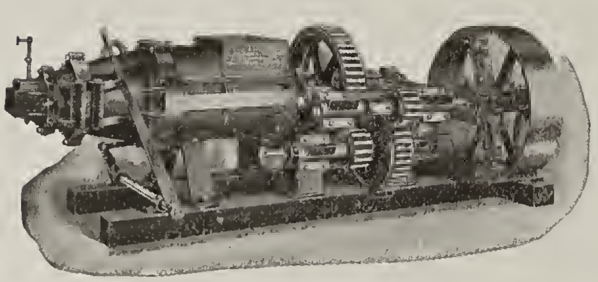

Model "B" Dry Press

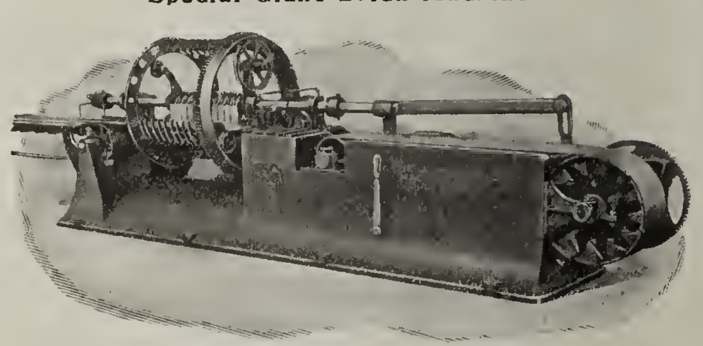

Eagle Repress

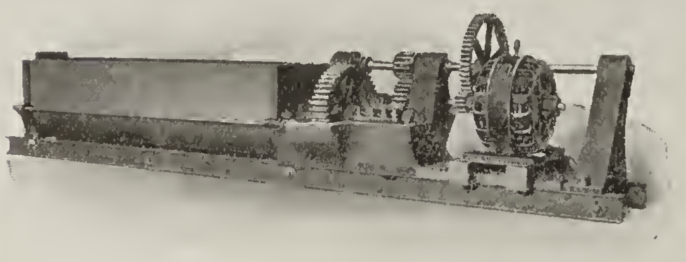

Roofing Tile Press

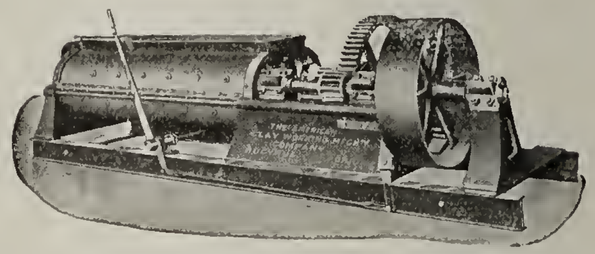

No. 65 Auger Brick Machine


Special Giant Brick Machine


No. 2 Giant Brick Machine


No. 83 Automatic Cutter


No. 51 Electrical Driven Pug Mill

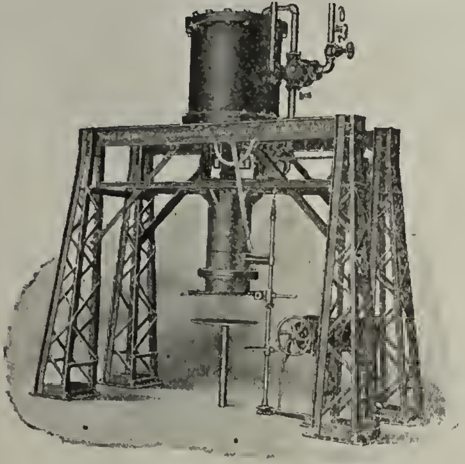

No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

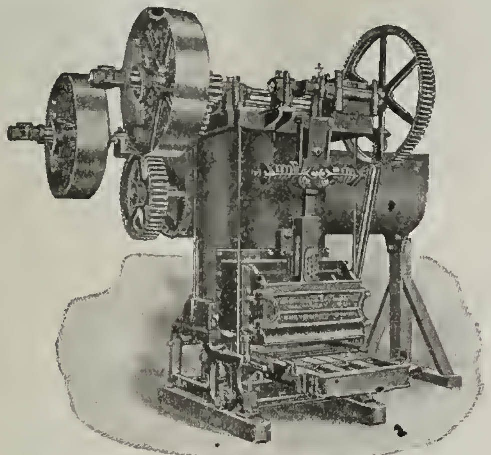
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

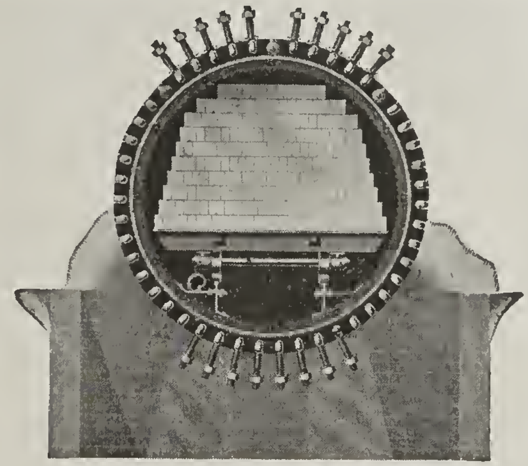
BUCYRUS, OHIO, U.S.A.



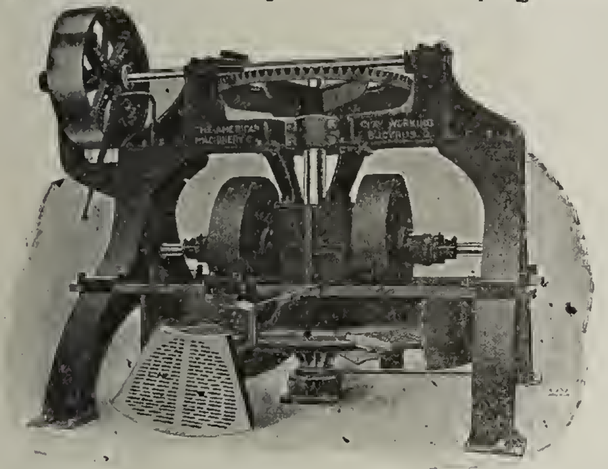
Sewer Pipe Machinery



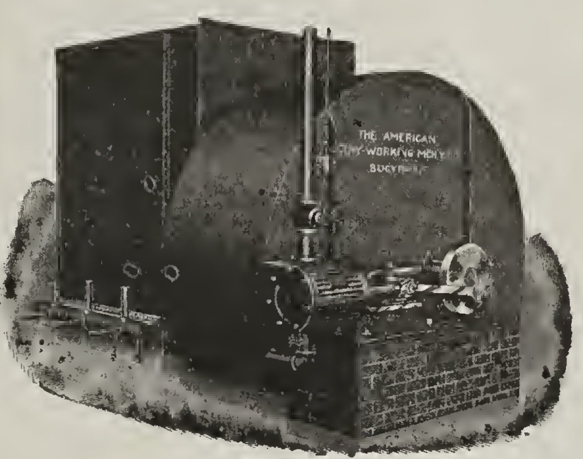
Upright Stock Brick Machine



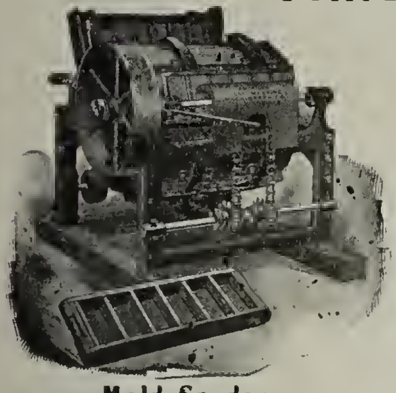
Sand-Lime Brick Machinery



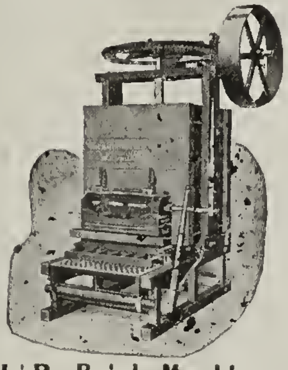
9 Foot Dry Pan



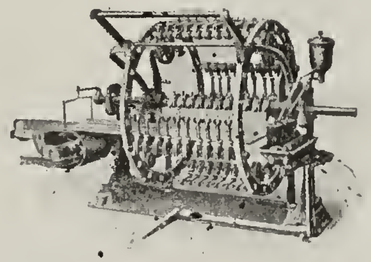
Blower Dryer Apparatus



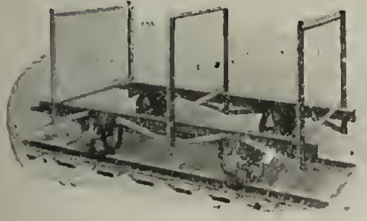
Mold Sander



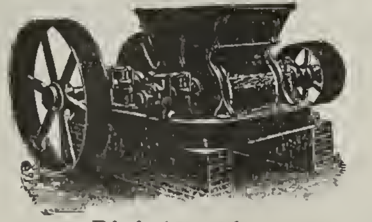
H. P. Brick Machine



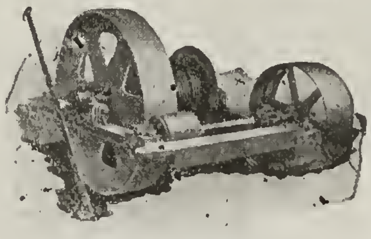
No. 62 Hand Power Cutter



Dry Cars



Disintegrators



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Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.
MEXICO, MISSOURI

NOW READY—A TREATISE ON

PRODUCER-GAS and GAS-PRODUCERS

BY AN ACKNOWLEDGED AUTHORITY.

A 300-page book containing thirty chapters, giving the fundamental principles and definitions, calculations, classifications, manufacture and use; the fuel, the requirements, the history, its by-products, **Producer-Gas for firing kilns, steam boilers, and power plants.** The future of the Gas-producer and a bibliography.

OVER 100 CHOICE ILLUSTRATIONS—PRICE, $4.00.

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Protect your Home, Business, Factory

Insurance Reduced. Child can Operate.
Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

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AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less speed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE

We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

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Something New In Brick Kilns and Dryers

The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

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Their Occurence, Properties and Uses

With special reference to those of the United States, by Heinrich Ries, Ph. D.
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These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

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Send for proof; also details about our Hand Presses, Dry Pans, Pulverizers, Mixers, Crushers, Elevators, Screens, Clay Plows, Clay Gatherers, Shafting, Hangers, Pulleys, Belting, Trucks, Barrows, Kiln Irons, Dryer Cars, etc.
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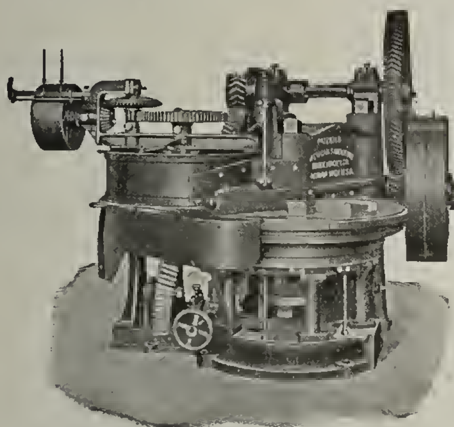
The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



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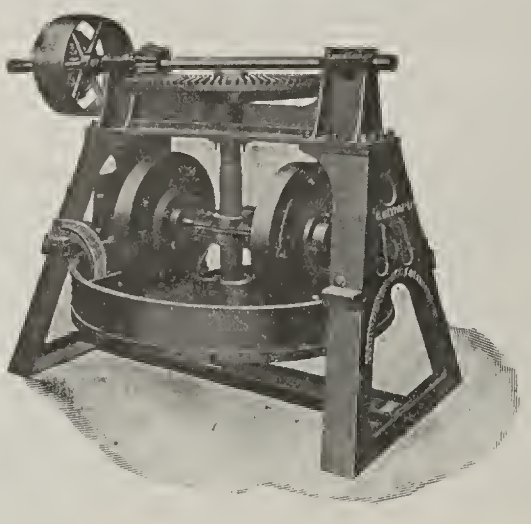

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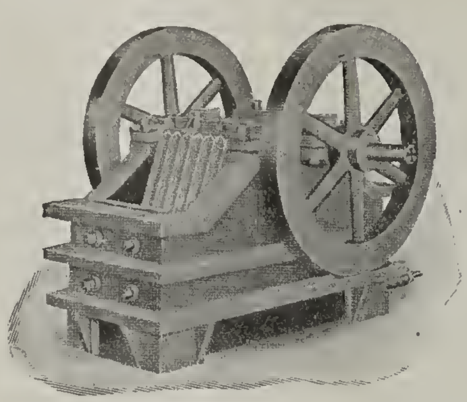

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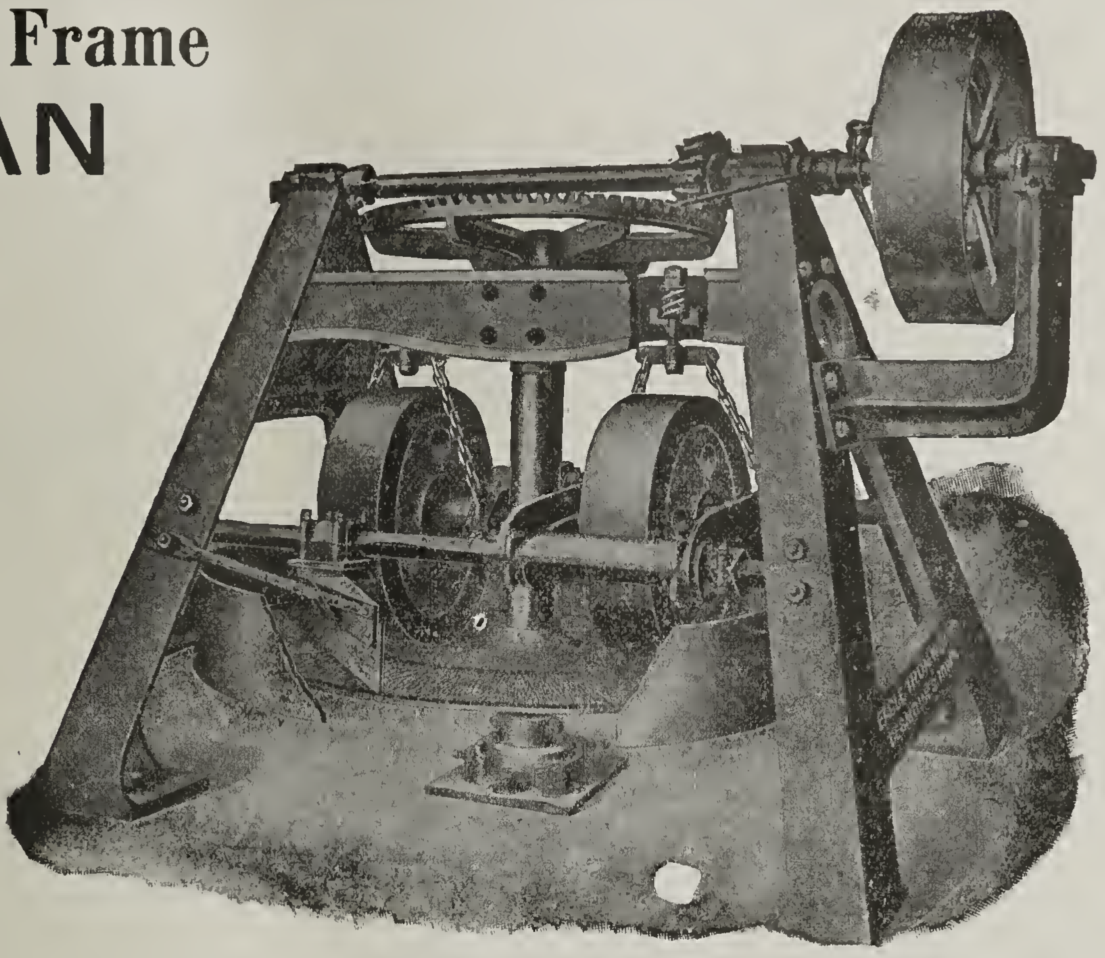

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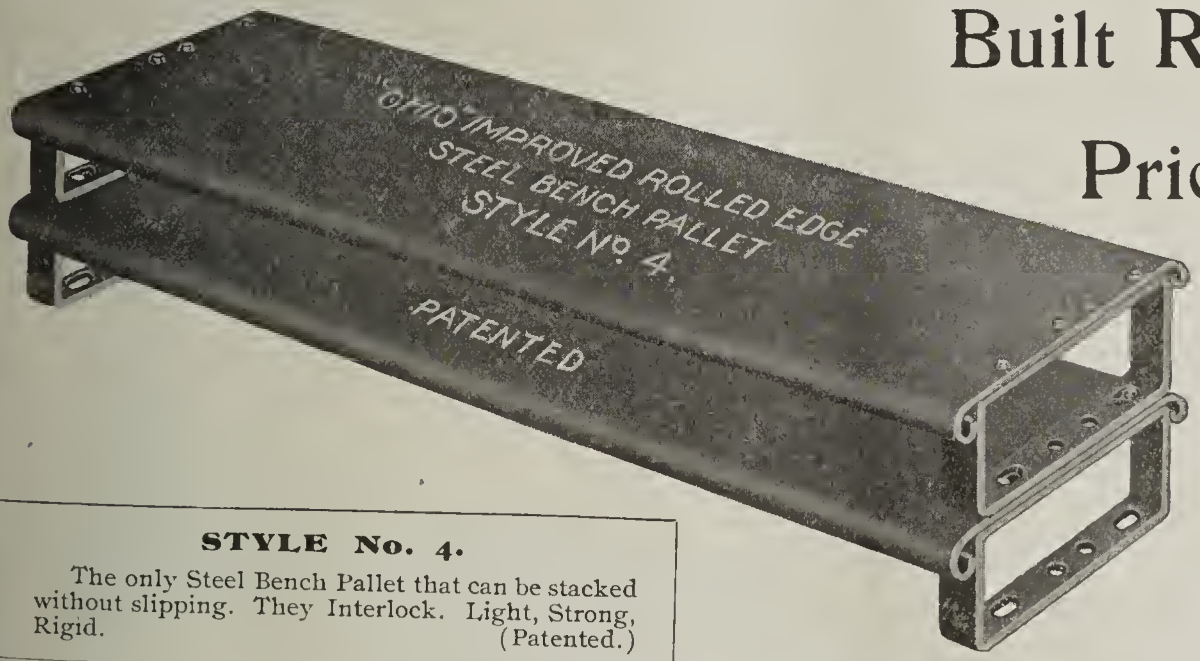

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The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

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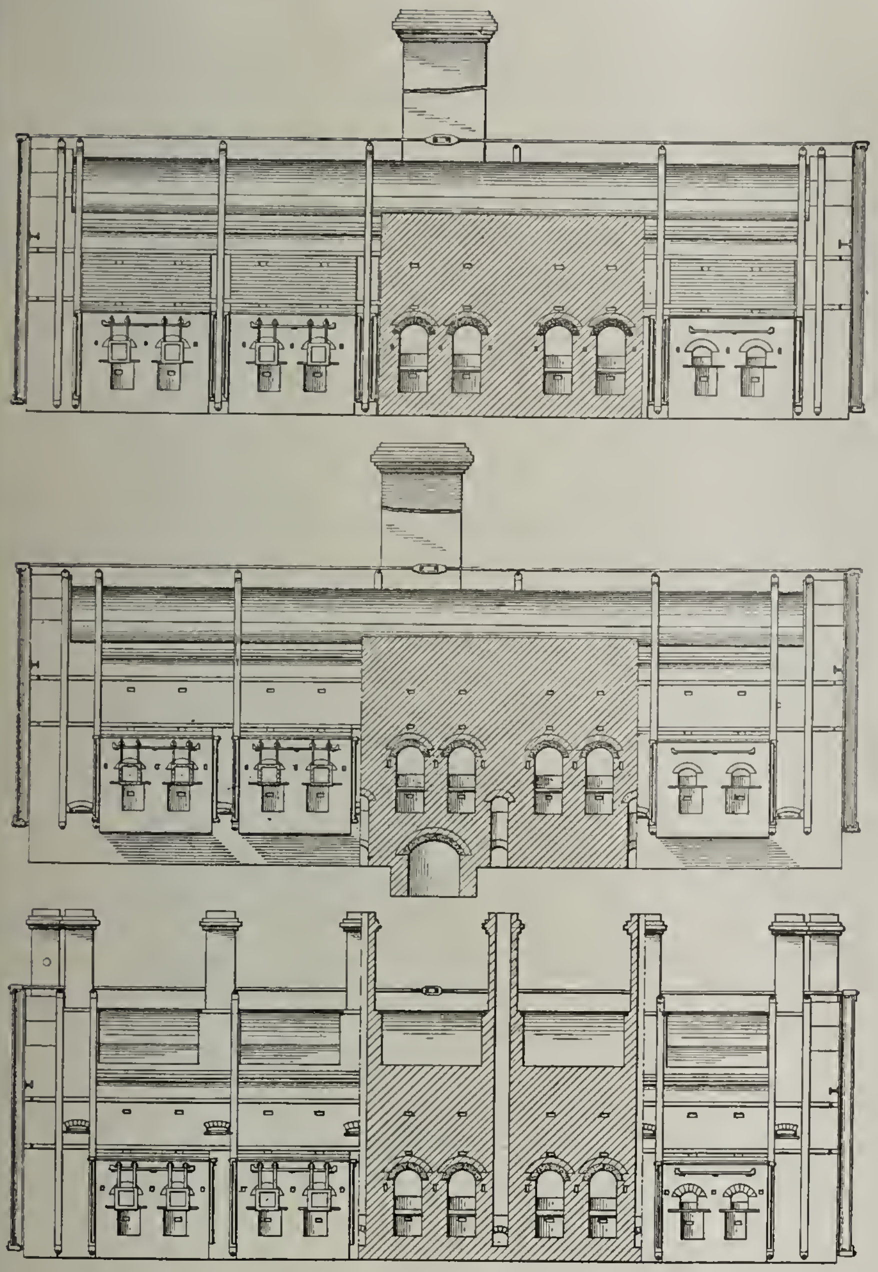
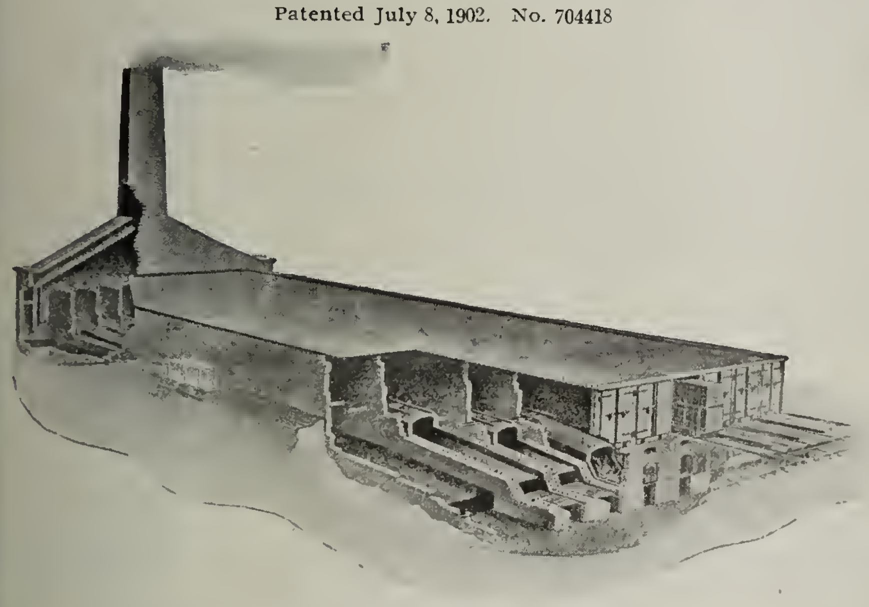
Wilson Kilns and Dryers



Patented July 8, 1902. No. 704418



Patented March 3, 1903. No. 721988

THOMAS M. WILSON

Mr. Wilson is the Inventor and Patentee of the Wilson Kilns and Dryers, including the smoke consuming furnaces which will burn brick without smoke, also the Continuous Waste Heat System, which does away with the smoke nuisance.

Mr. Wilson has served twenty-five years in a practical way in the brick business and his judgment in building up-to-date, successful Brick Plants is second to none in the business.

The Wilson Kiln & Dryer Company, established 1898, has arranged with Mr. Wilson to use his improvements; also for his assistance.

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We believe we have the most satisfactory kiln and dryer system to produce results on the market.

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West End Trust Building
Philadelphia, Pa.

Thomas M. Wilson, President

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CHICAGO IRON CLAD DRYERS
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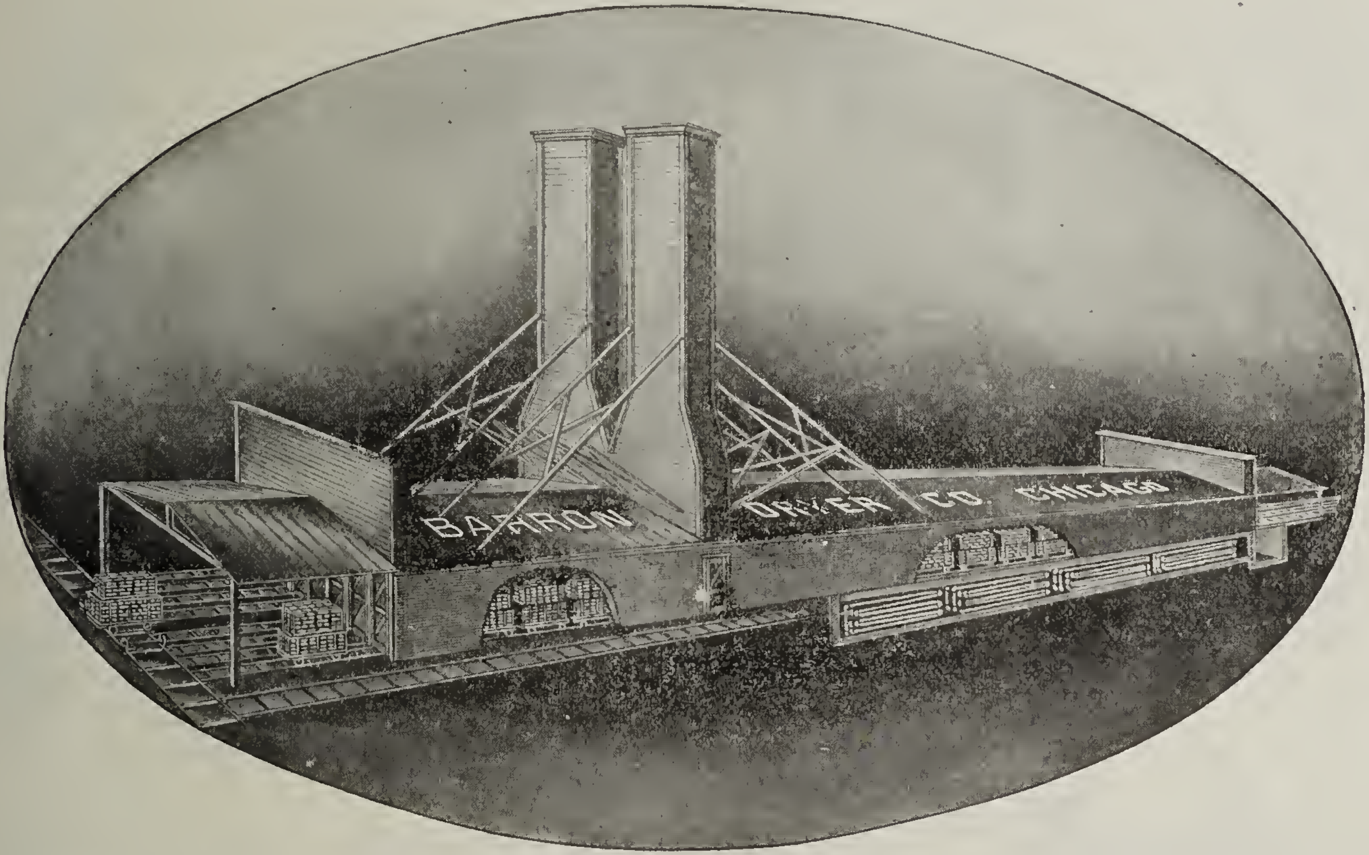

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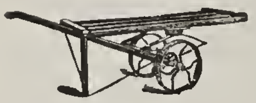
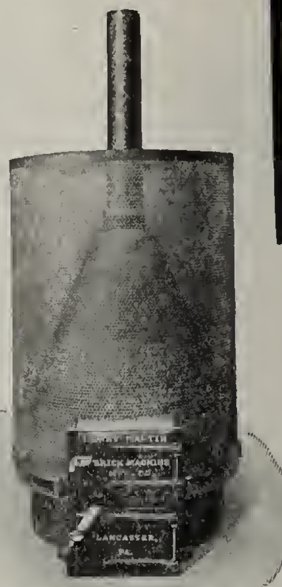


TRUCKS



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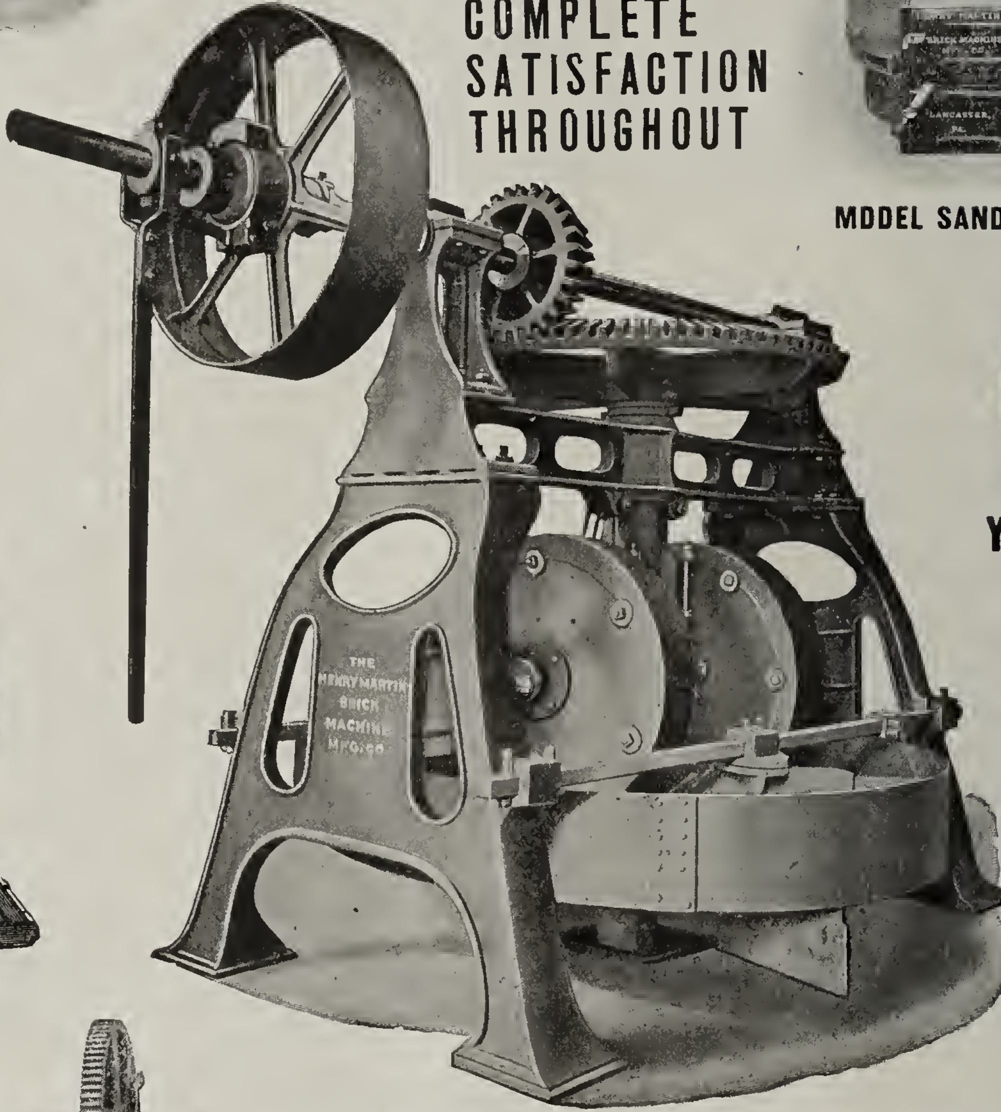
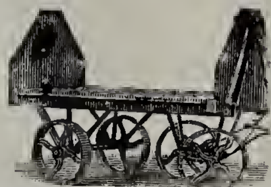
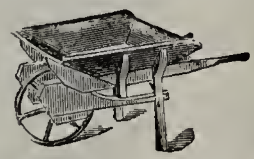
WE GUARANTEE OUR MACHINERY



HORSE POWER MACHINE



YARD SUPPLIES



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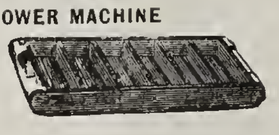
BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



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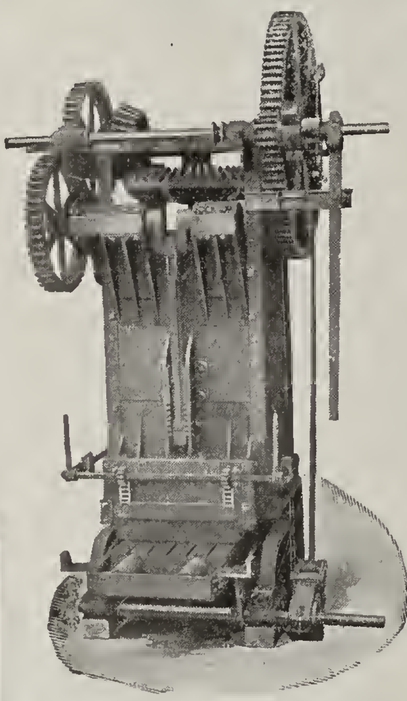

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"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"

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October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN".

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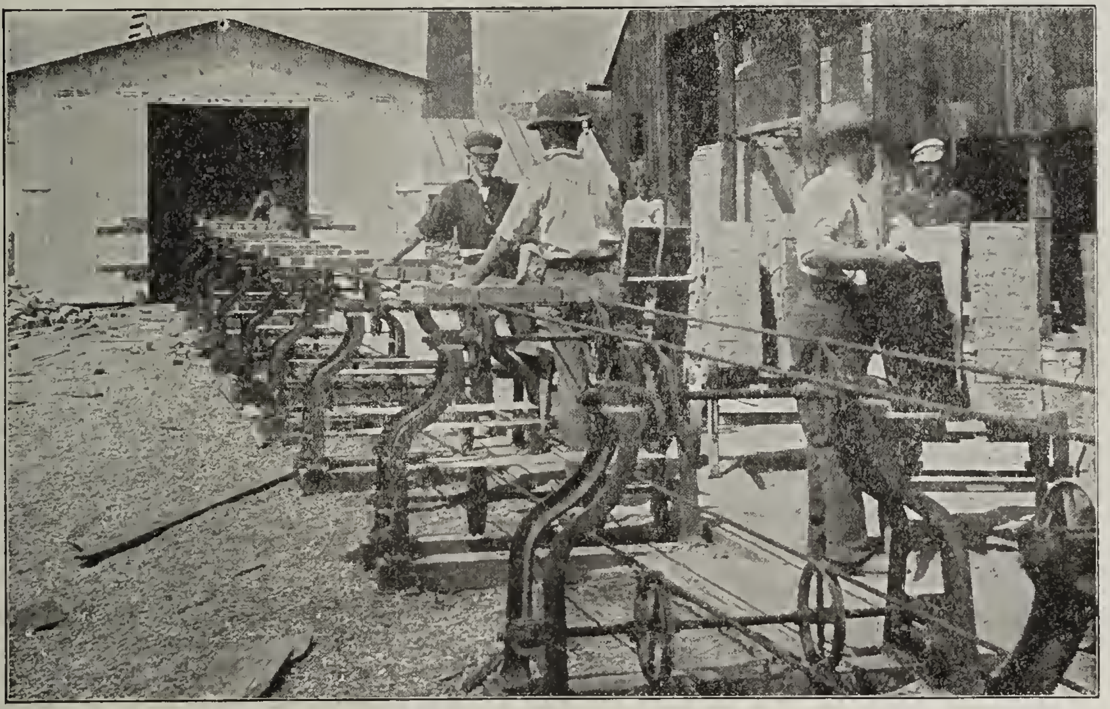

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The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

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THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

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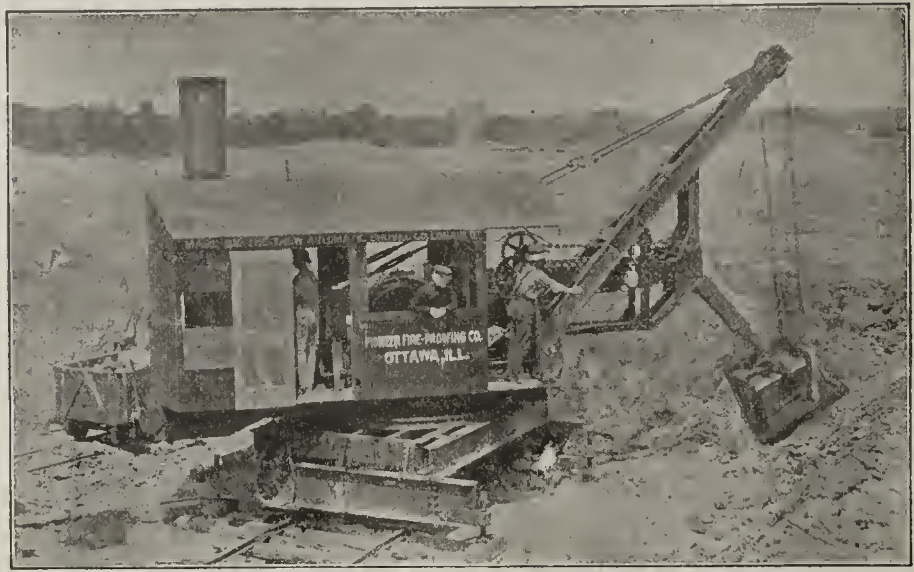
HANDLE YOUR CLAY WITH ONE MAN AND **The Thew Steam Shovels**

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.



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Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adiusted to cut to any desired level.

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Wire Cables used instead of Chains.
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Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

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LORAIN, OHIO

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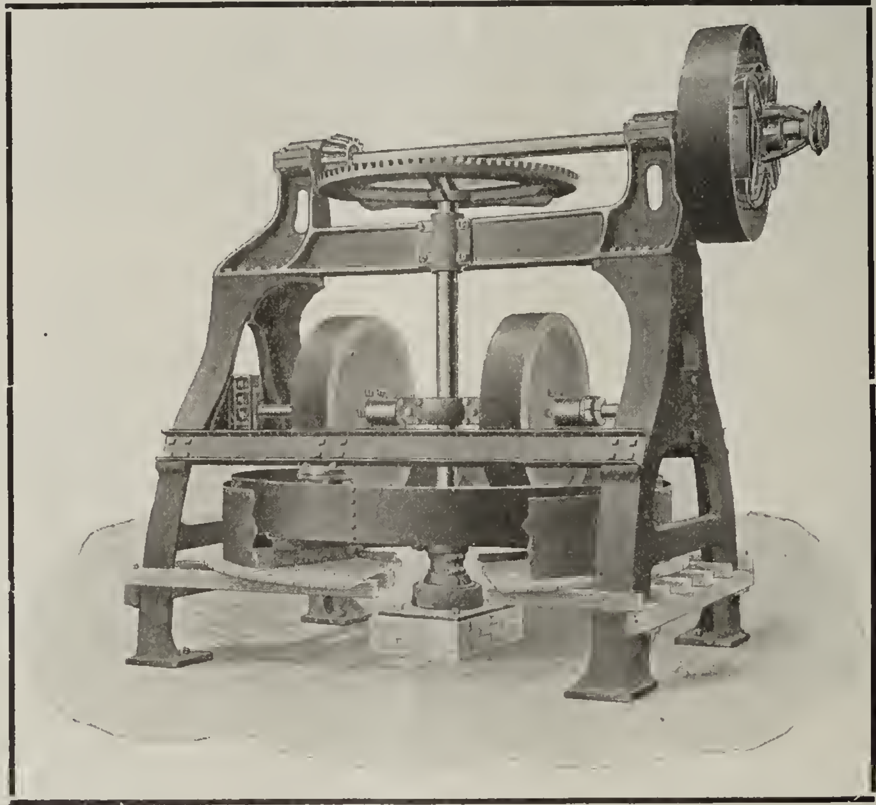
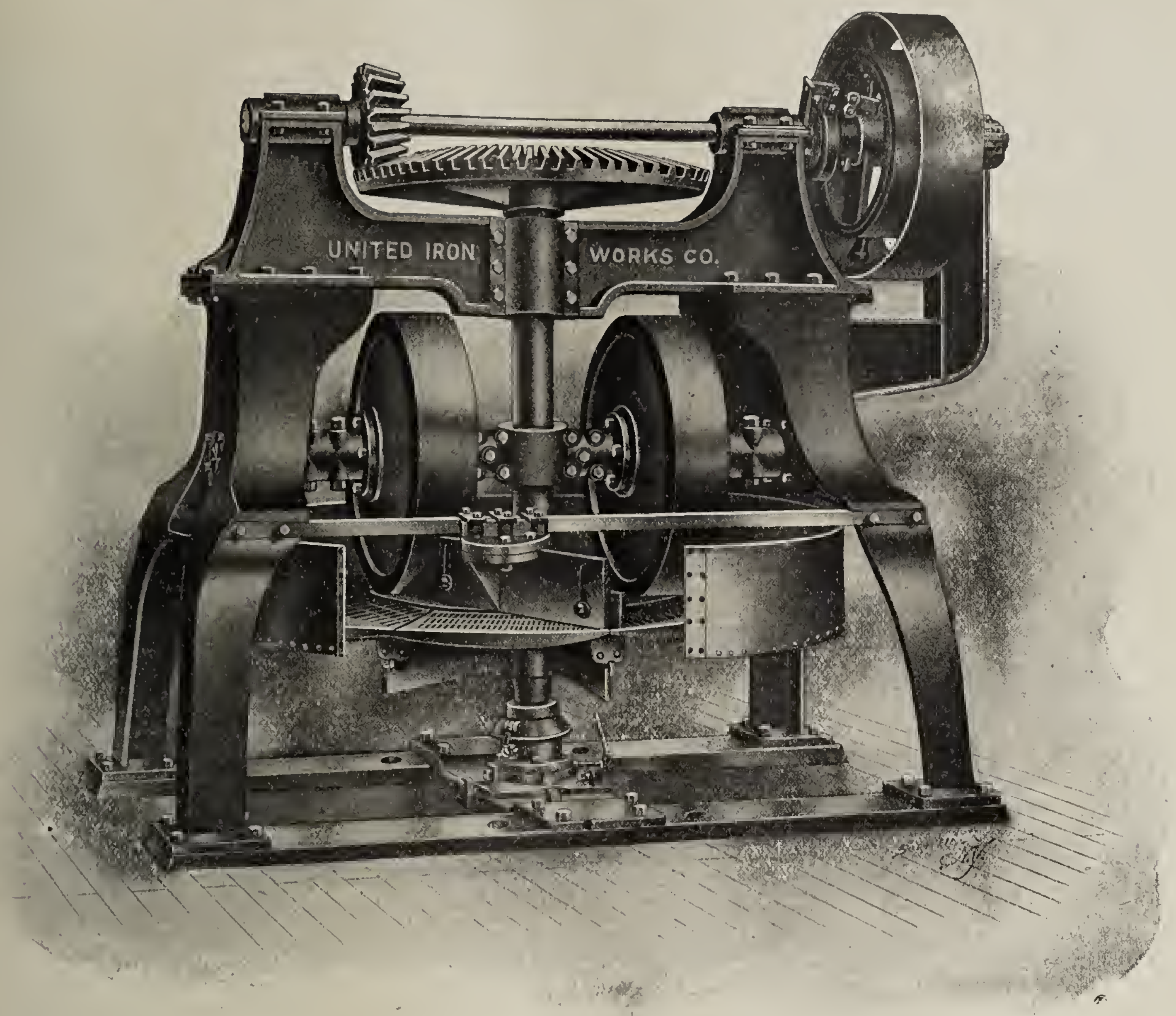


Dry Pans

The TURNER VAUGHN & TAYLOR CO.
Cuyahoga Falls, Ohio, U. S. A.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Yours truly,
WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
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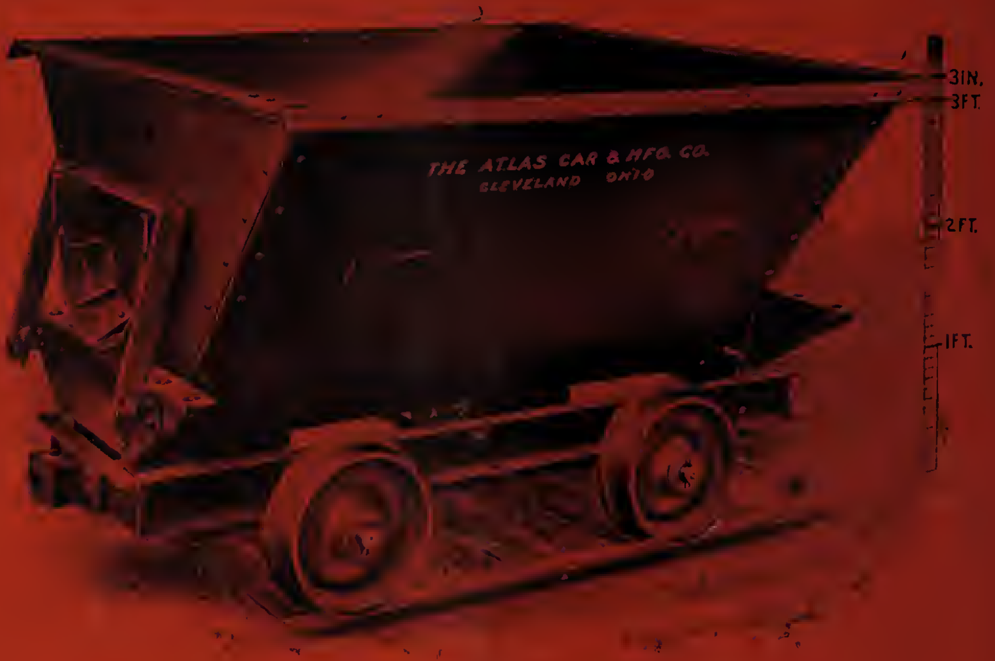
No. 217-E
Electric Side Dump Car.

No. 146
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car, with trip and brake.

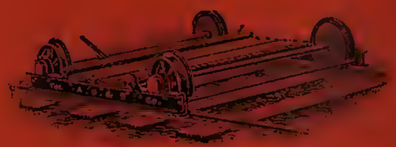
CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.



NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.



NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

VOL. 34 No. 6

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
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March 30, 1909

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The Youngren Gas Fired Continuous Kiln

Announcement

We are pleased to announce to the Brick Making World that we have taken over all patents of the late *Peter L. Youngren* of Milwaukee, Wisconsin, covering the *Youngren Gas Fired Continuous Kiln* and all other types of the Youngren Kiln.

The success of this kiln is now most thoroughly established. All who are interested in the installation of the *Youngren Producer Gas, Gas Fired Continuous Kiln* are invited to consult us for particulars regarding construction, operation and contracts of same.

The C. W. RAYMOND CO.
Dayton, Ohio, U. S. A.

We issue the following publications which may be obtained upon application to our Publicity Department.

"Smiles"

EXHIBITS

2040 - Heavy Duty Dry Pan.
2044—"999" Brick Machine.
2 45 - Perfection Hand Represses.
2046 - Conveyors.
2047—Four Roll Combination Crusher.
2049 Niagara Hollow Ware Machine.
2053—Bevel Geared Pug Mills and Granulators.
2056—Portable Track.
2060—Roofing Tile Designs.
2061 - Dry Press Machinery.
2063 Raymond System of Open Air Drying.

General Catalogue
"Old Methods Discarded"

EXHIBITS

2069—Peerless Smooth Roll Crusher.
2070—No 3 Daytonian Brick Machine.
2075—Universal Semi-Automatic Cutter.
2078—Soft Mud Machinery.
2081—Automatic Wet Pan Emptier.
2083—No. 1 Rotary Automatic Cutter.
2084—Dryer Cars.
2085—Hand Dry Press.
2086—End Cut Cutting Table.
2087—"777" Brick Machine.
2088—Hoisting Apparatus.

"Dry and Why"

EXHIBITS

2089—No. 2 Combination Brick Machine.
2090 - No. 2 Daytonian Brick Machine.
2091—Cup Elevators.
2092—Conical Roll Crusher.
2093—Piano Wire Screen.
2094—Single Geared Pug Mill.
2095—No. 2 Rotary Automatic Cutter.
2096—"555" Brick Machine.
2097– Low Frame Pan.
2098—Victor Repress.
2099—Radiated Heat Dryer.
2100—Standard Pug Mills.

Practical Tests and Chemical Analyses

The C. W. Raymond Company

DAYTON, OHIO, U. S. A.

RELIANCE

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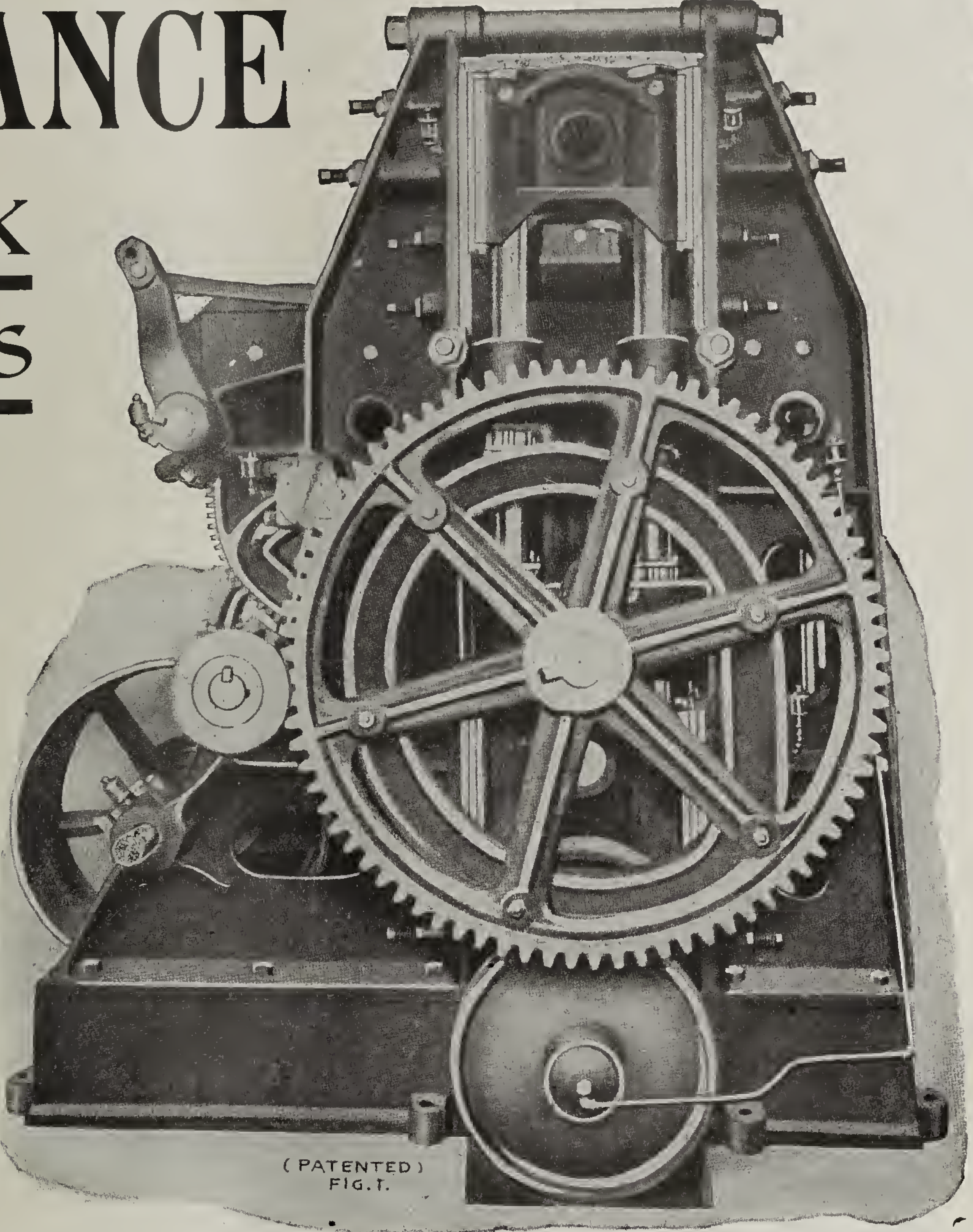


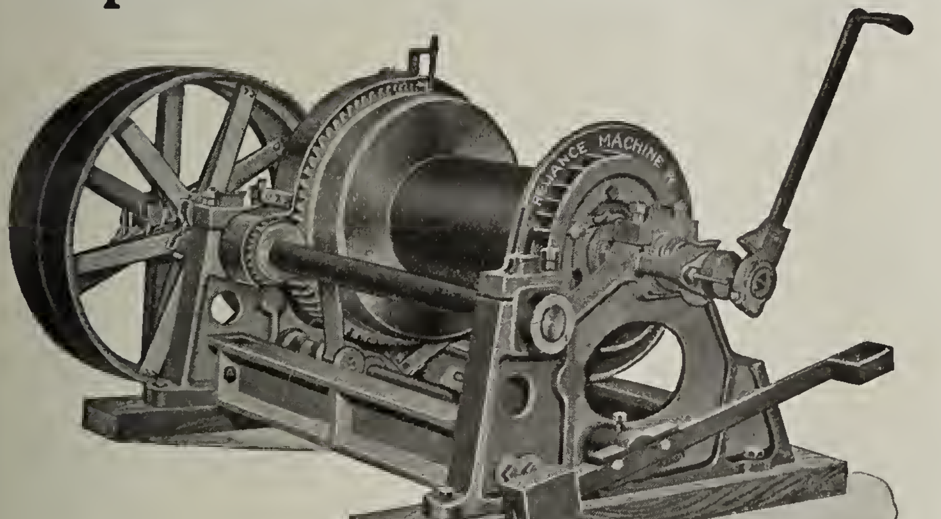
(PATENTED)
FIG. 1.

The Only
Machine Making
Brick Without
Granulated Centers

No Toggles
Powerful
Simple

We Design and Equip
Dry Press Brick
Plants Complete

Improved Reliance Friction Drum Hoist



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Specially Adapted to
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RELIANCE MACHINE and
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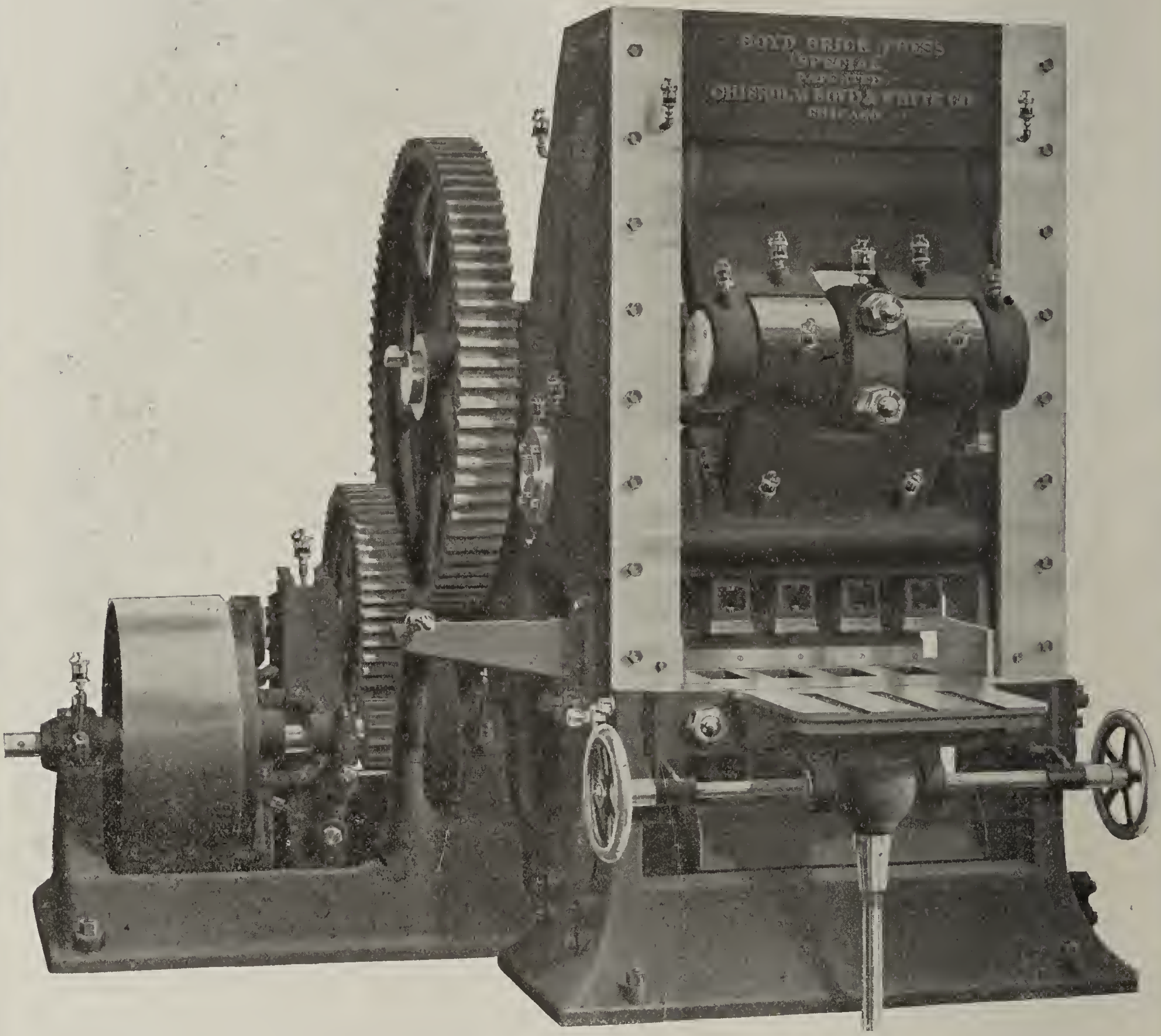

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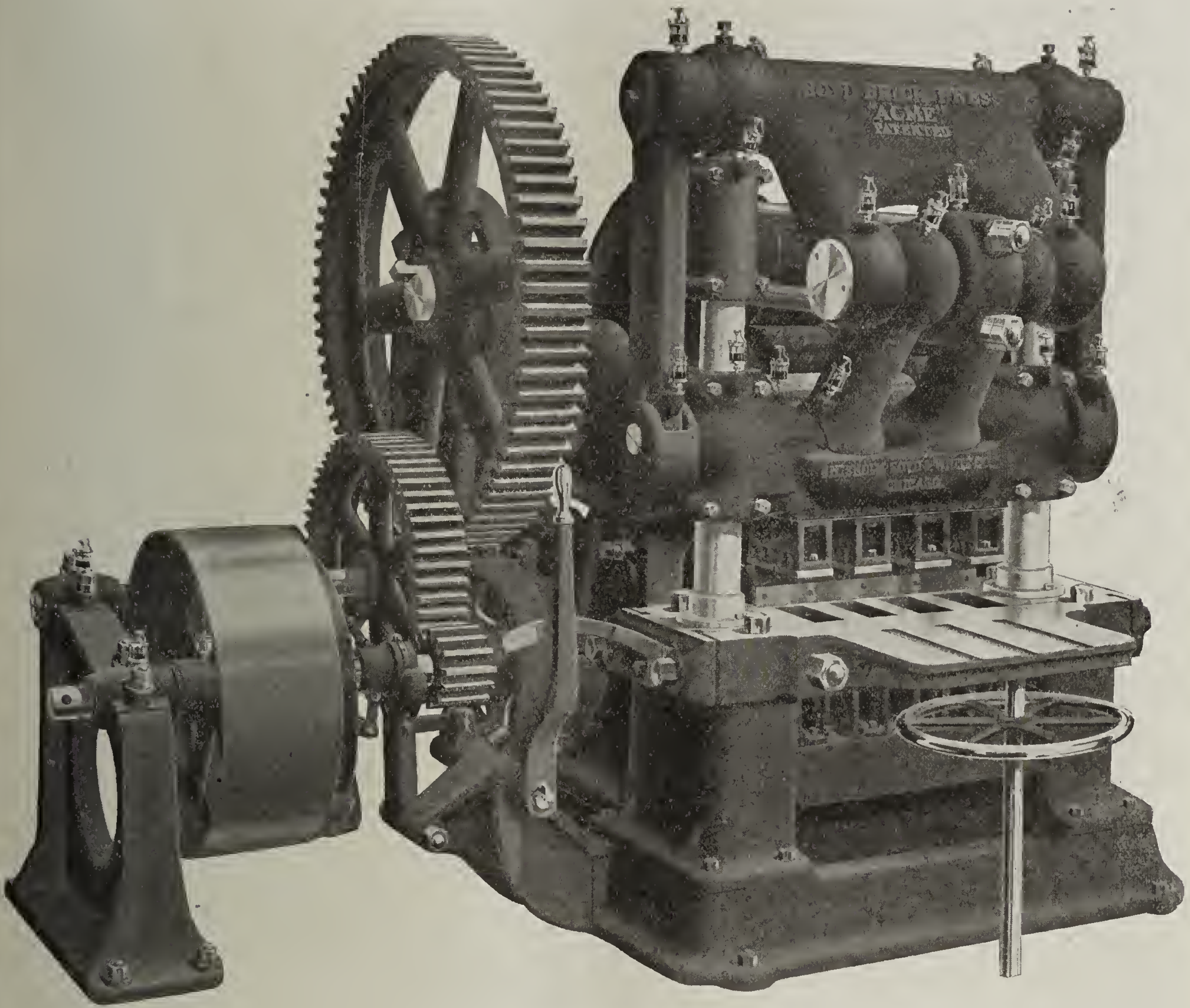

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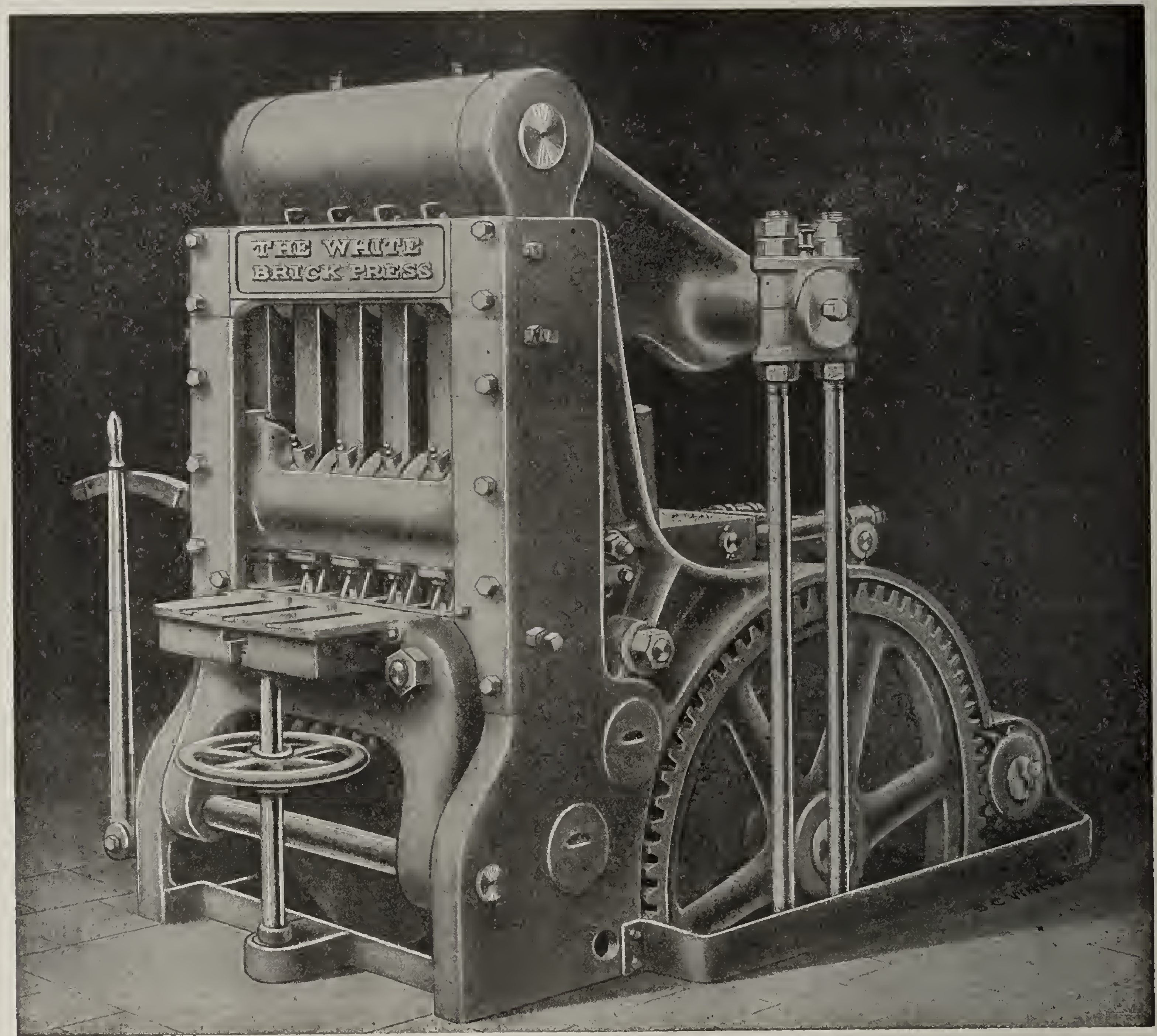

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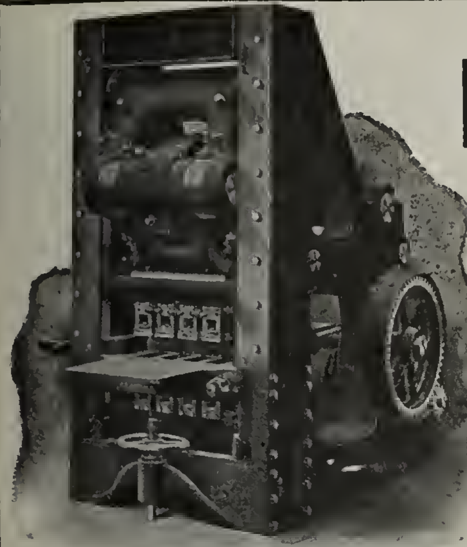

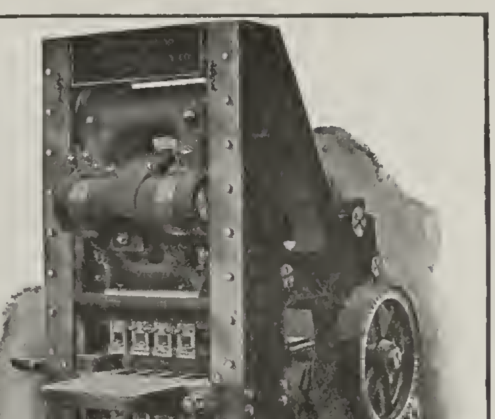

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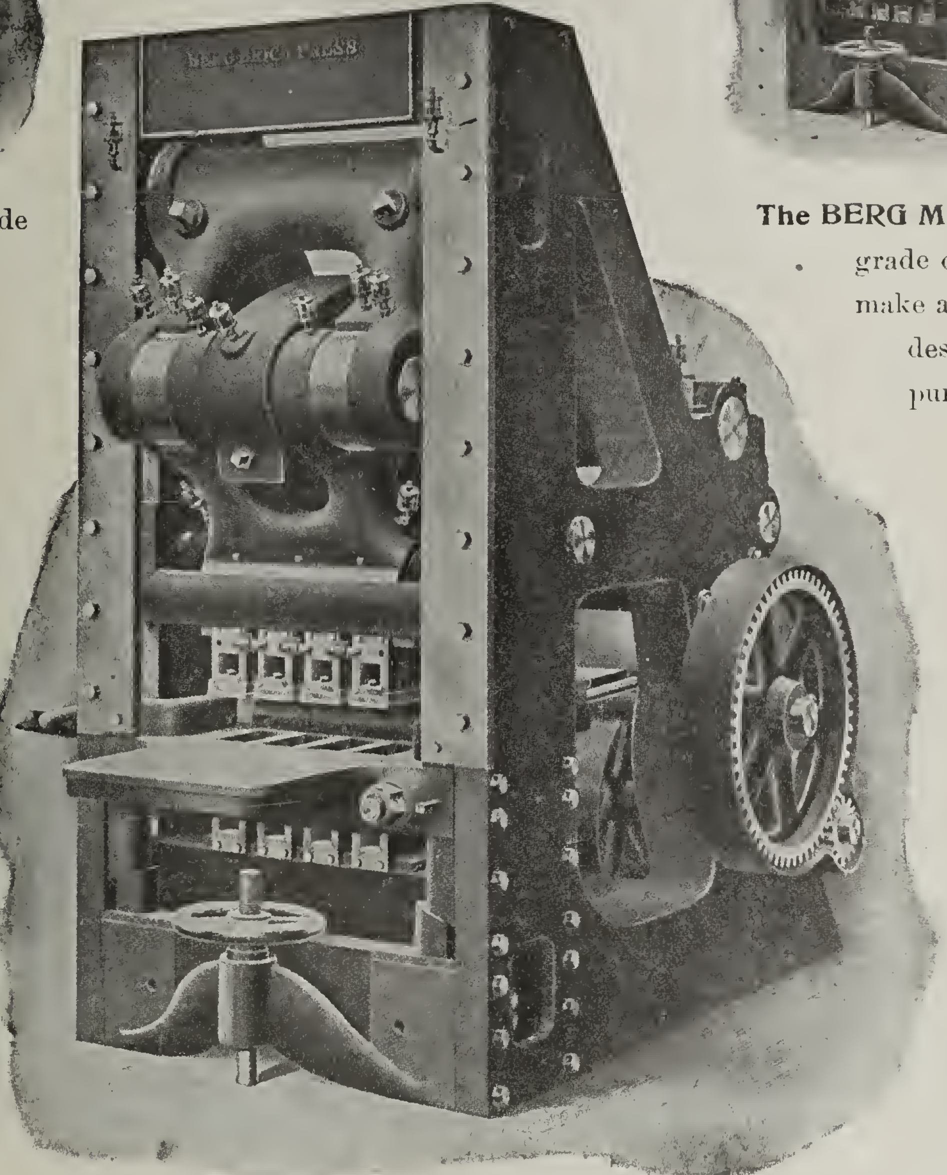

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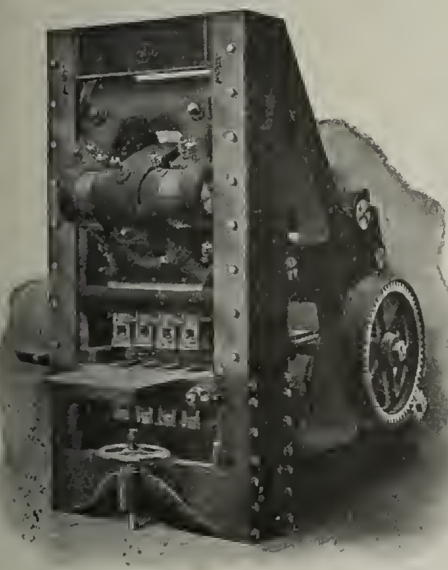

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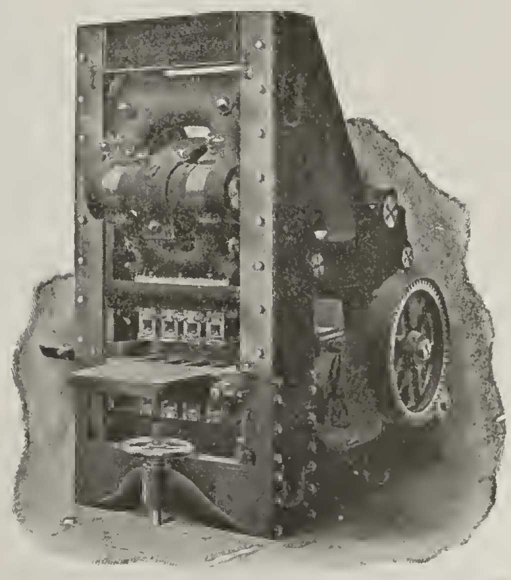

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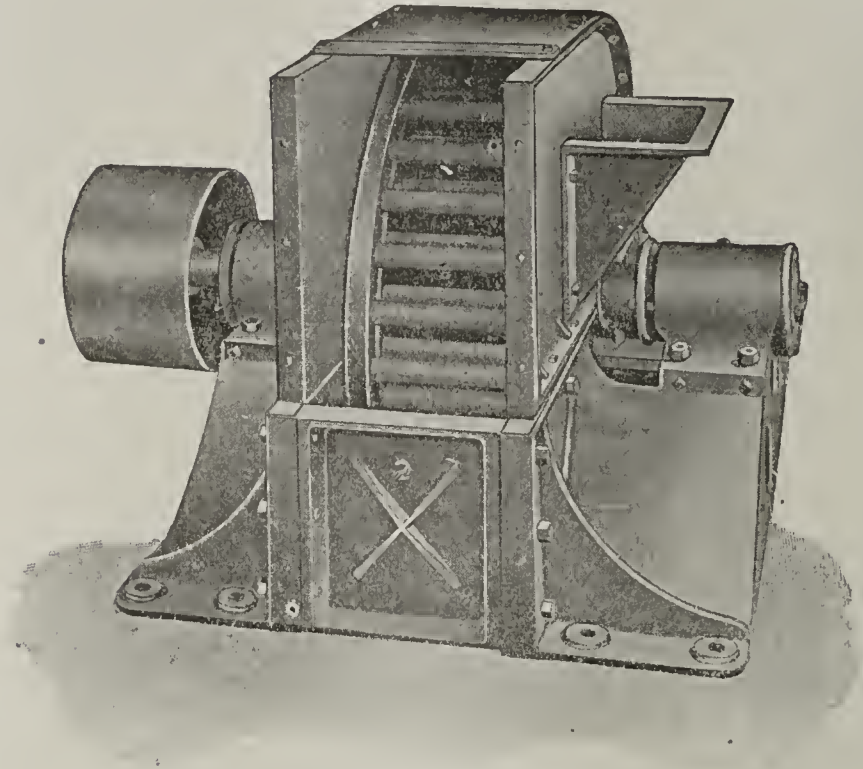

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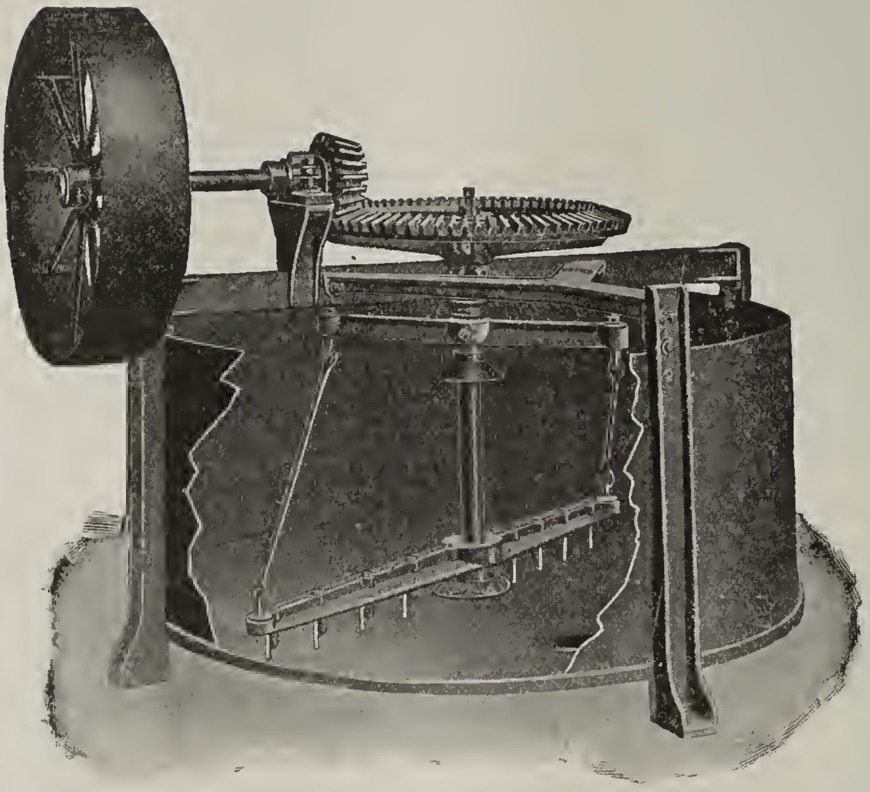

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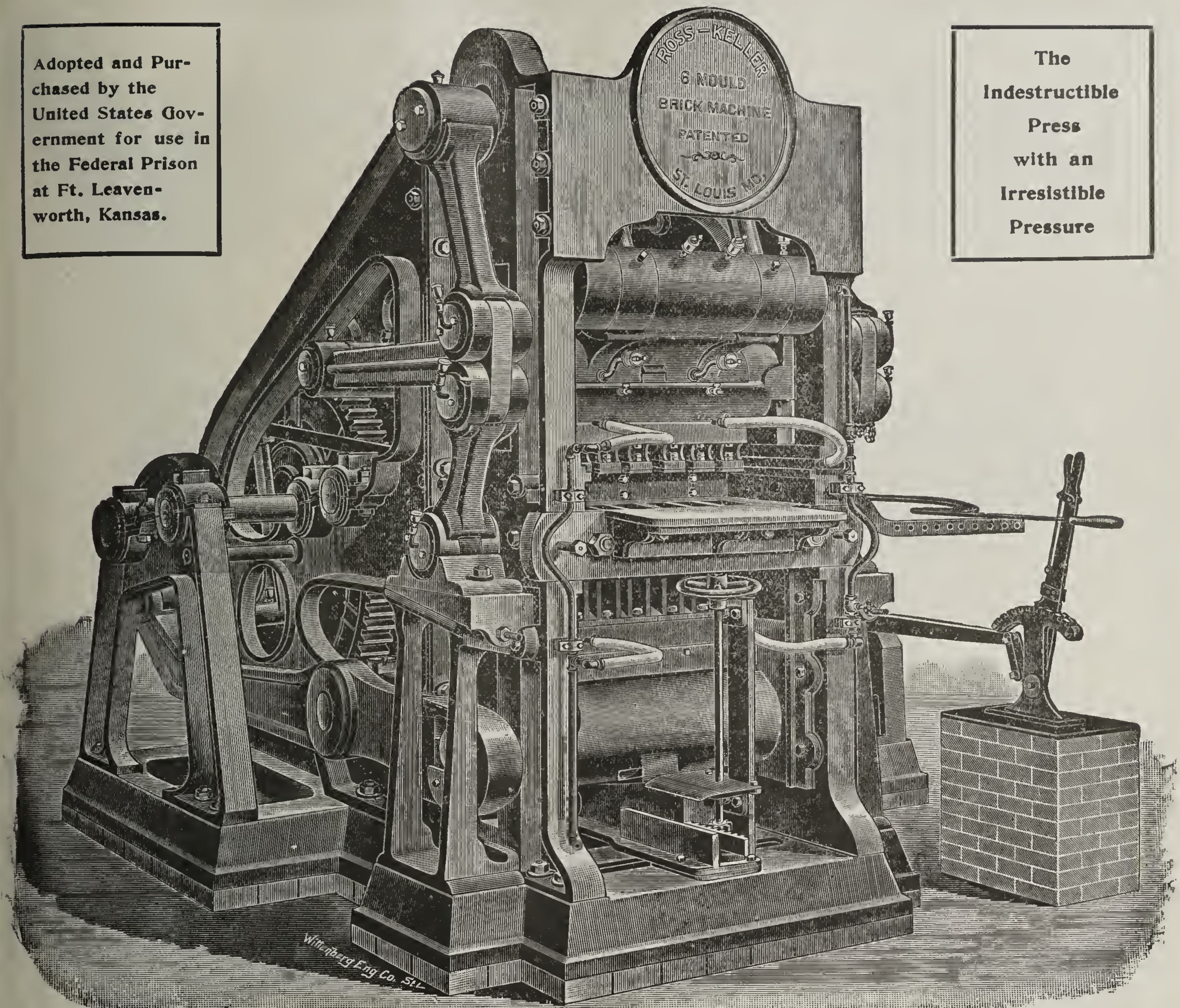

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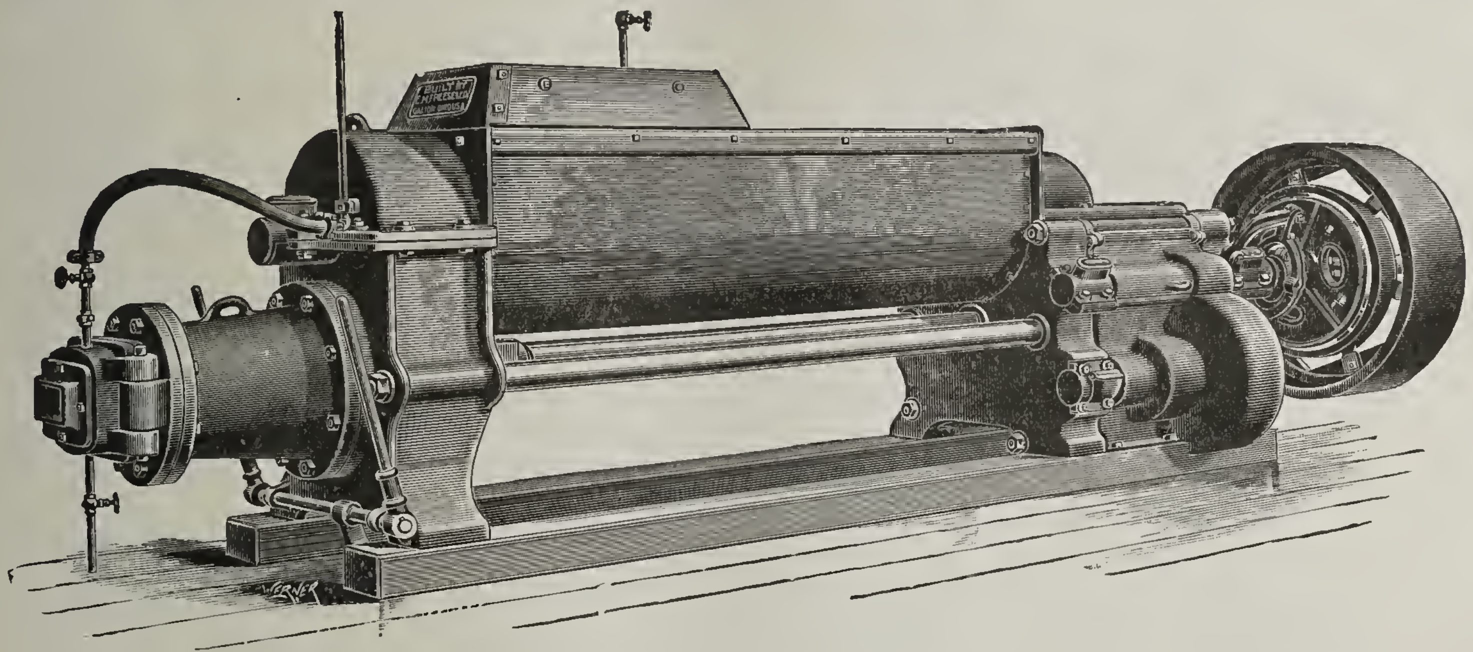

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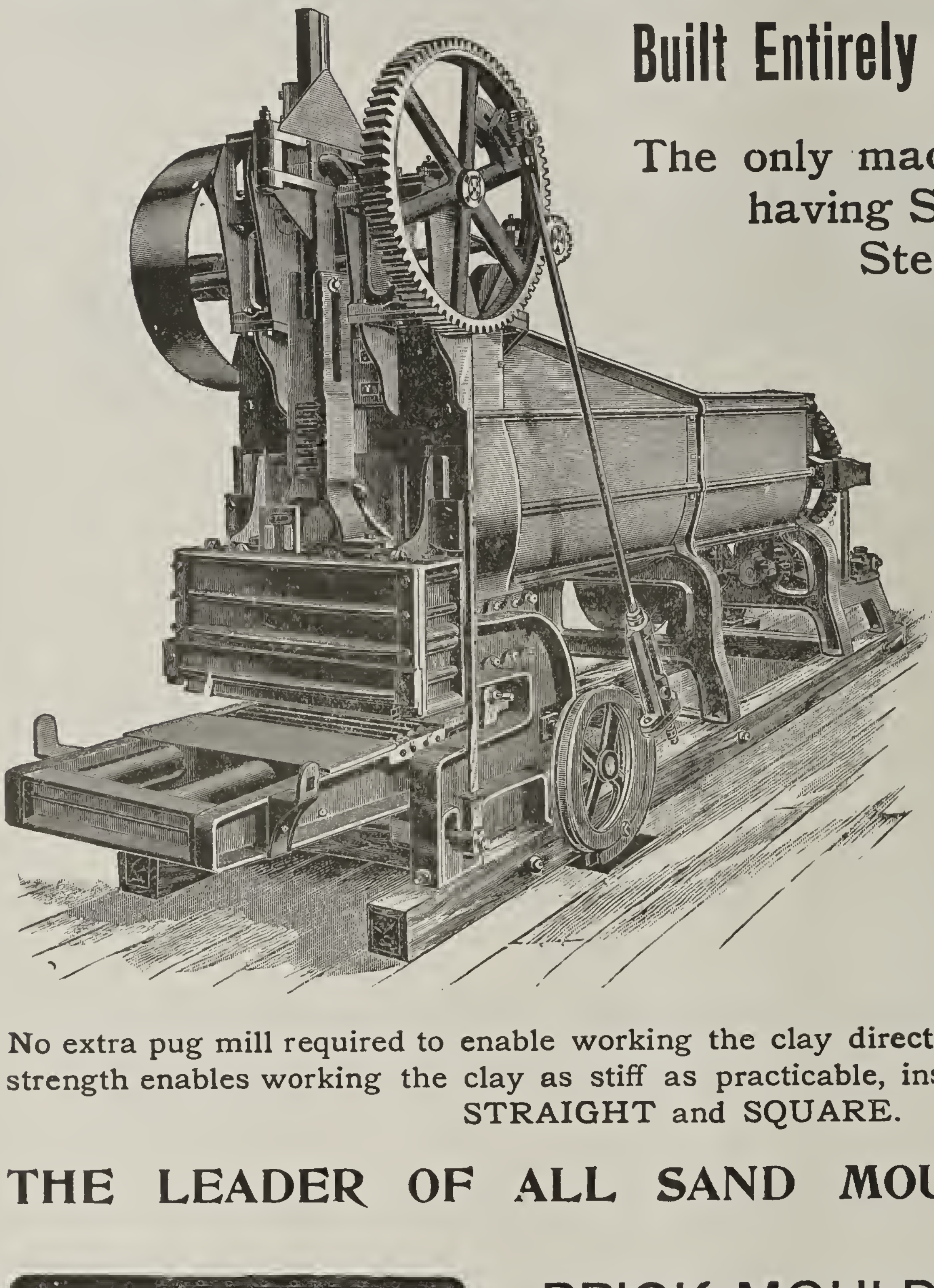

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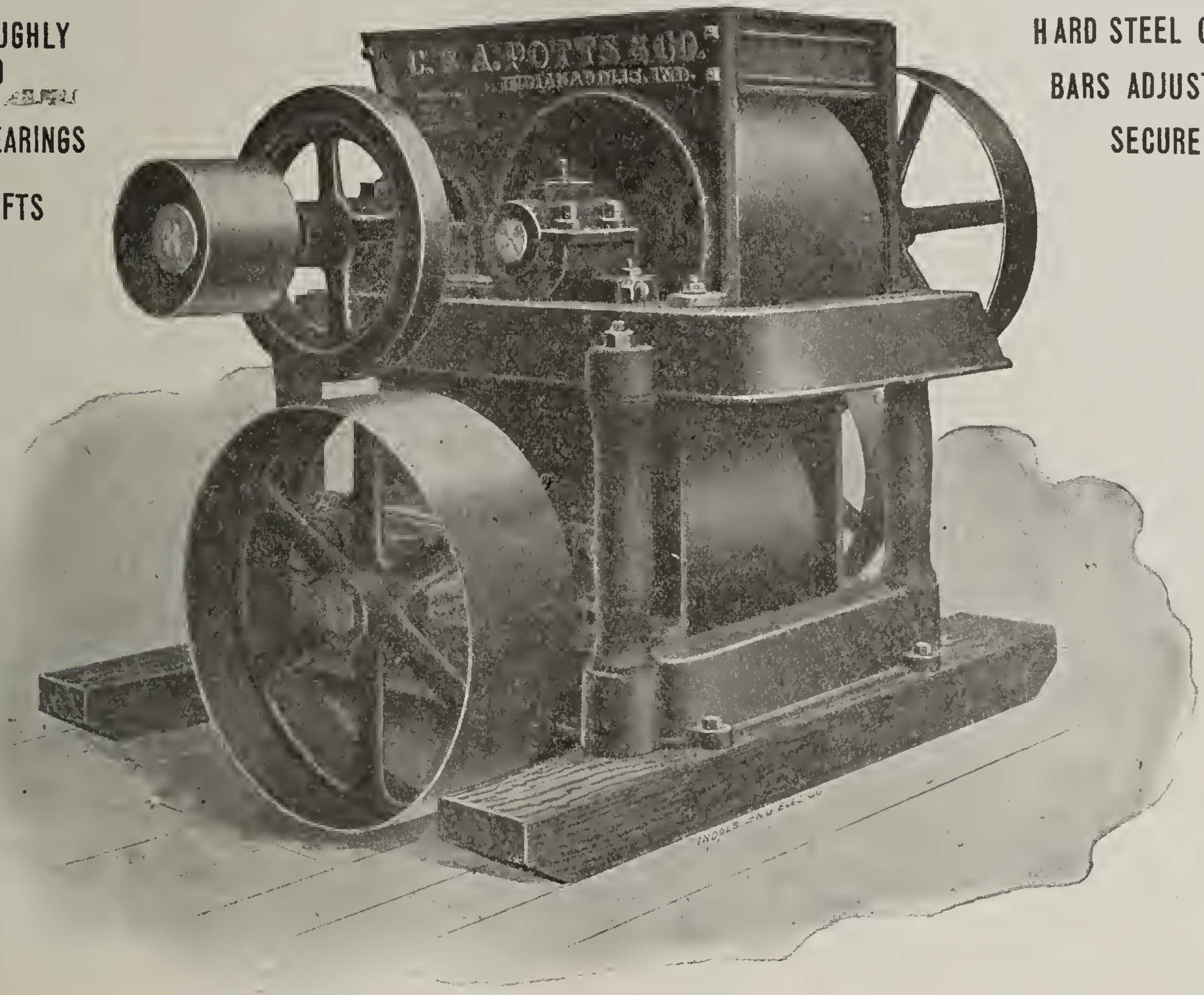

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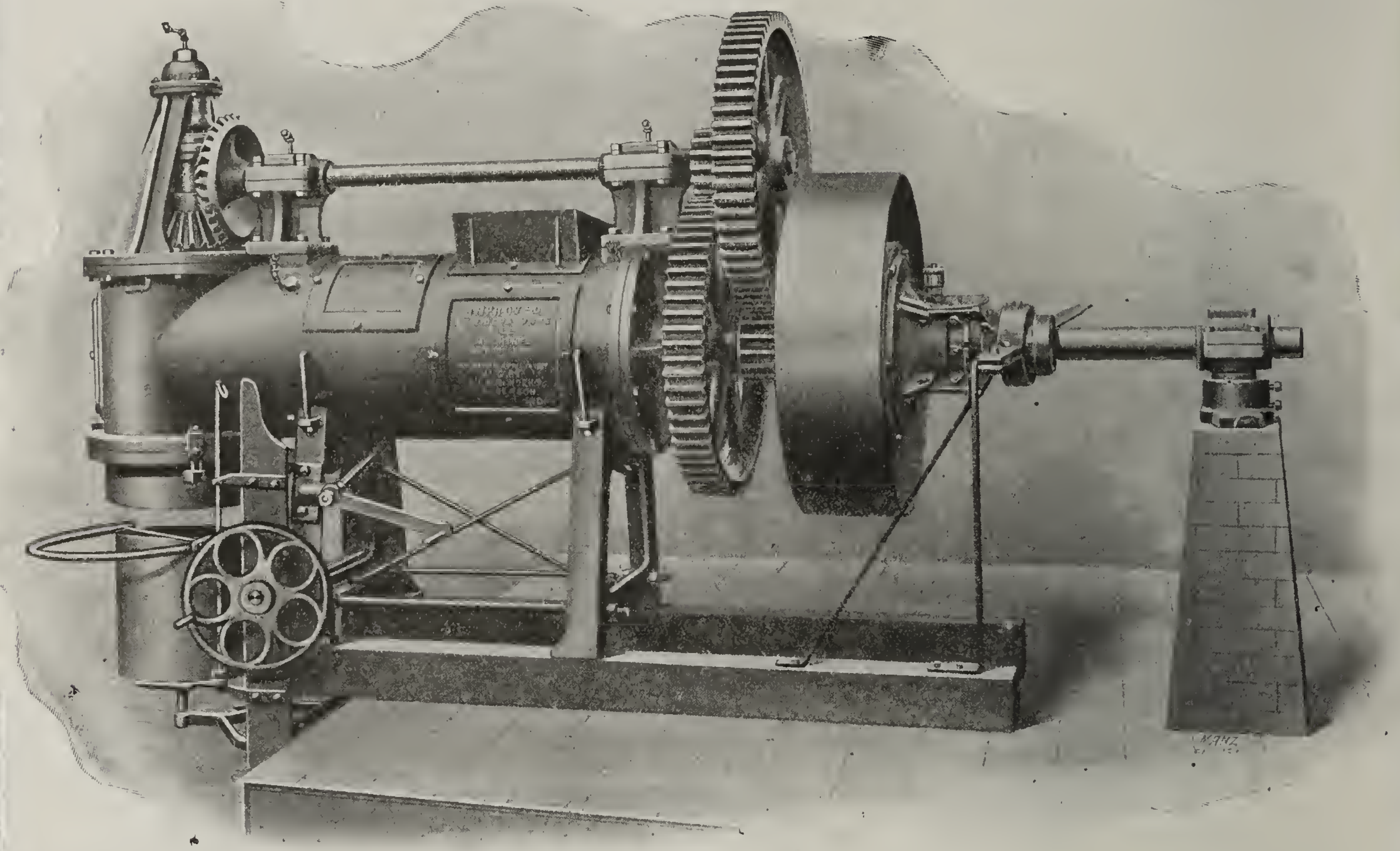

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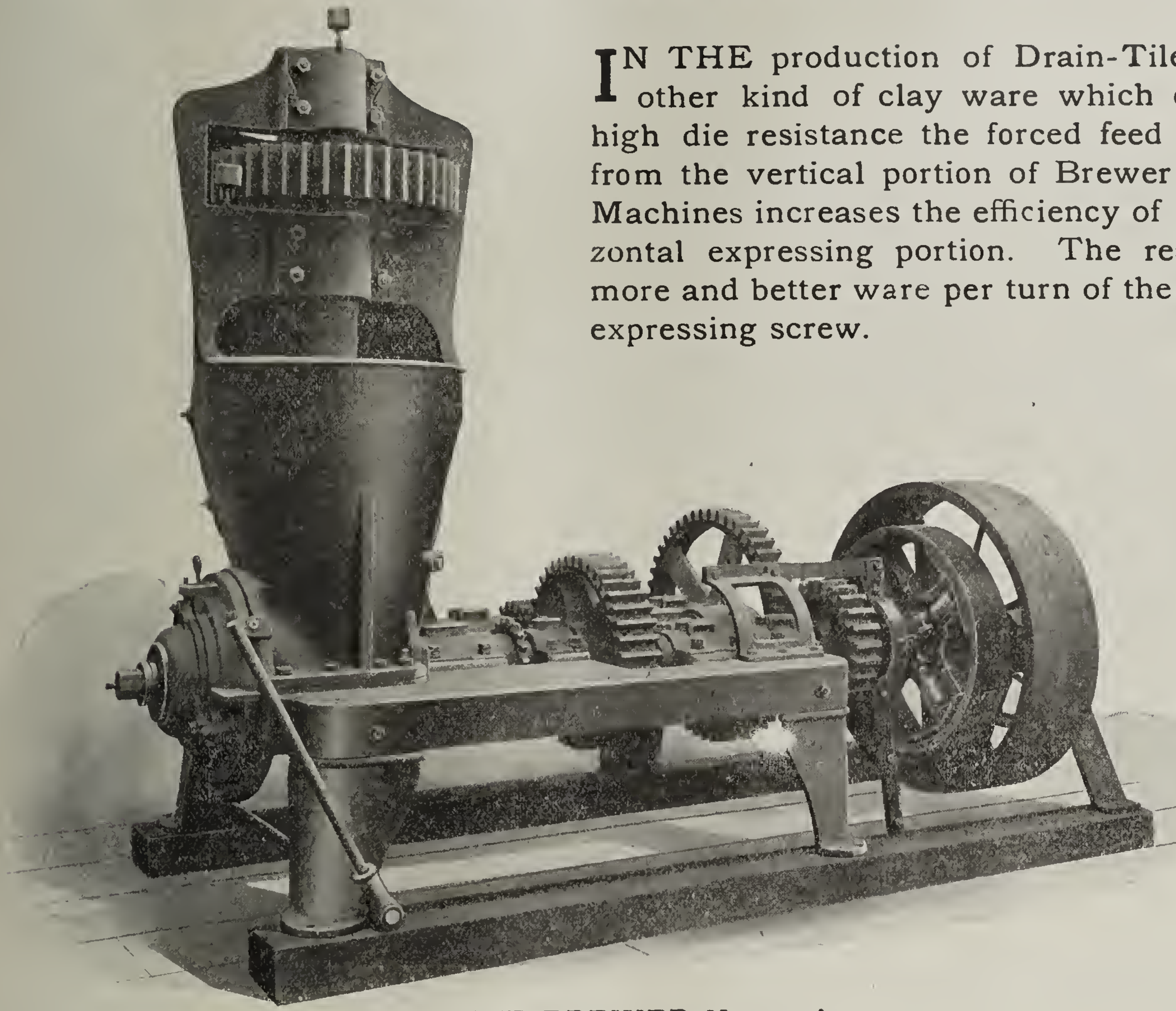

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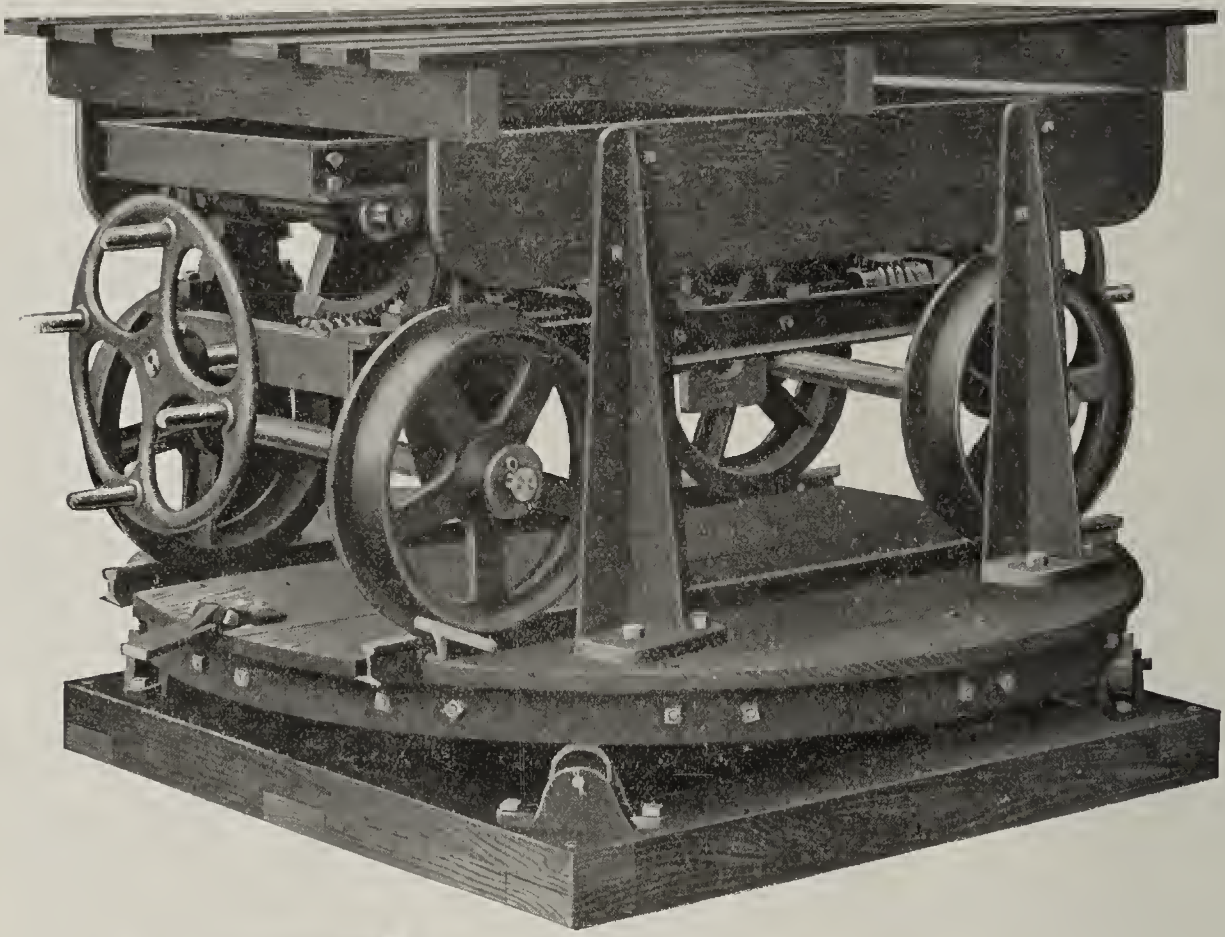

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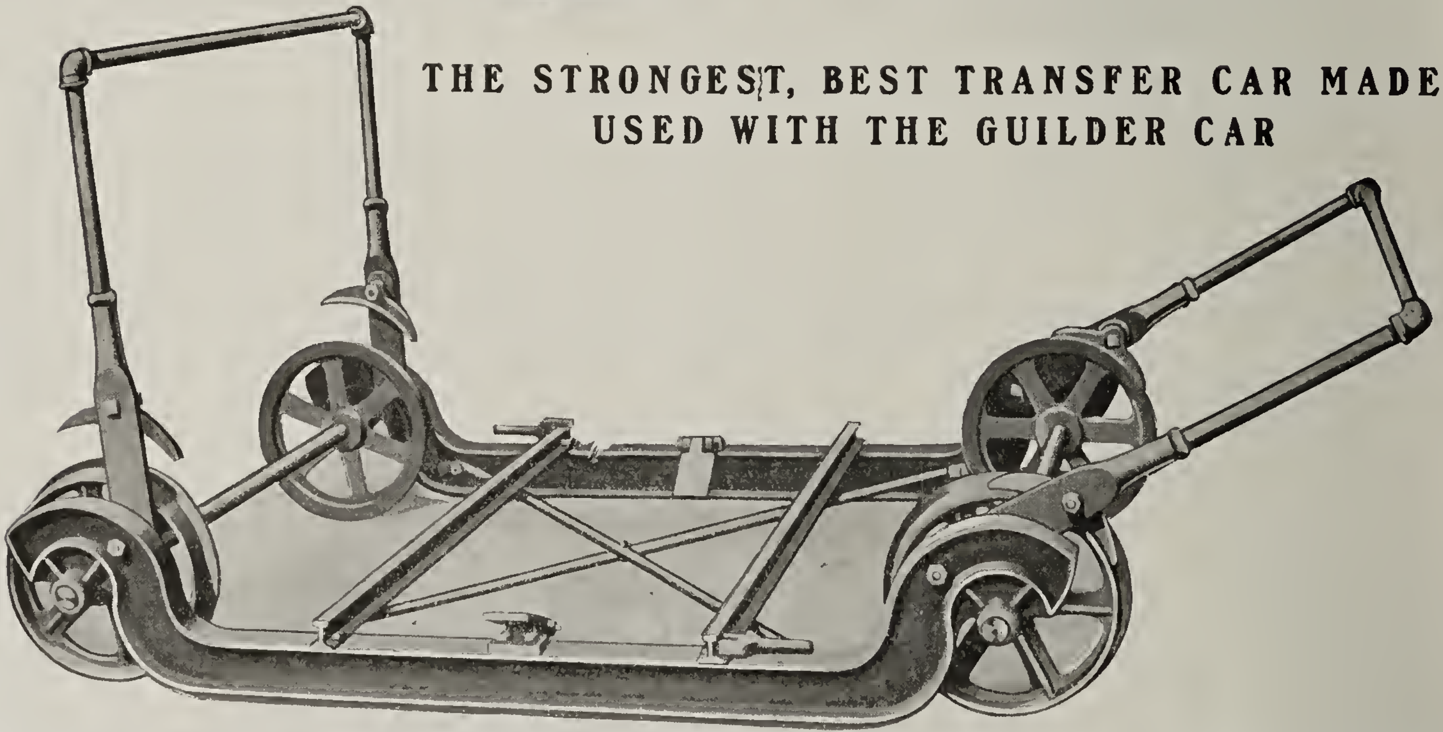

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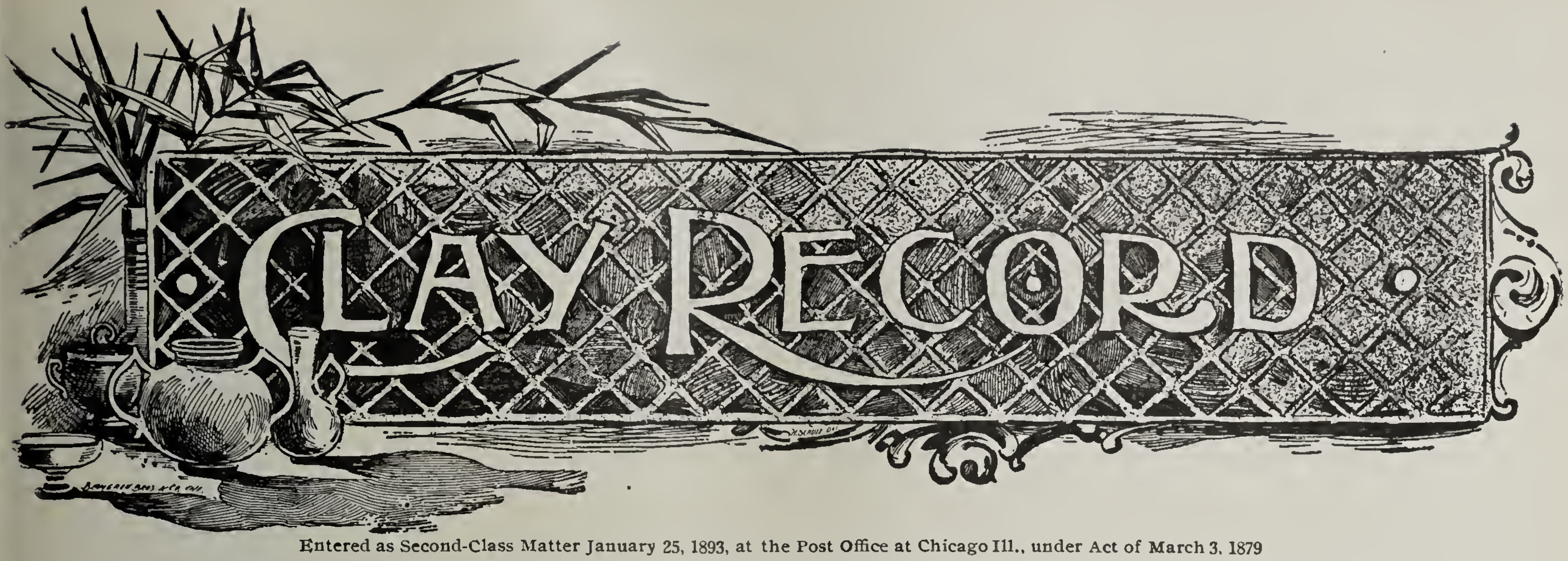

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Single Copies, - 10 Cents

*THE OUTLOOK OF THE ILLINOIS CLAY INDUSTRIES

PROF. A. V. BLEININGER, UNITED STATES GEOLOGICAL SURVEY, PITTSBURGH, PA.

It is both interesting and profitable to review the status of our clay working industries, noting their growth since the beginning of industrial development. And it is equally interesting to study the particular directions in which the industries appear to grow at the present time throughout the ceramic world. From these tendencies it might even be possible to make an attempt at predicting what the future will bring to the Illinois industries, without laying special claim to the title of prophet.

As a general proposition it might be said that the magnitude of the clay industries is bound to increase much faster in the future than it has in the past. With the rapidly growing density of population, with the constant increase in the price of wood and with the needs of a more exacting civilization, the demand for clay products will rise at a very rapid rate.

Our manufacturers should prepare not only to meet these demands but also to encourage them. In other words, a certain amount of pioneering work must be done, and we must not hesitate to open up the field wherever an opportunity offers. Without fear of contradiction it might be said that there is no country in the world offering such opportunities to the clay industry as the United States, and what is true of the whole country is especially true of such a wealthy state as Illinois.

The writer wishes to sketch the directions in which he thinks the Illinois clay industries will develop very briefly, and he shall take up the principal industries one by one.

Common Building Brick: It is reasonable to suppose that the heaviest quantitative increase must necessarily be the share of this industry, since the bulk of the wood used as building material must be replaced by brick. The gradual displacement of frame houses by brick must absorb an enormous number of brick. This means that even smaller towns will offer good markets which must be supplied. The question of available clay supply is then bound to arise since the best brick-making materials are not uniformly distributed over the state. Owing to the fact that a large portion of the state is covered by glacial clays which offer, in many cases considerable difficulties for the manufacture of bricks, we must learn how to handle them to the best advantage. The difficulties do not seem to be too great to be overcome, though it is quite evident that more elaborate machinery must be employed which means larger investments for the individual plants.

With the increase in the demand for bricks, requirements for higher quality are bound to arise, since many yards will be asked to supply bricks good enough for the outside of buildings. There is no doubt but that the expansion of common brick manufacture will also be coincident with the more general adoption of the continuous kiln, enabling even the smaller producers to make brick through the greater part of the year and lowering the burning cost greatly.

There is no doubt but that Chicago at the present time manufactures bricks as cheaply as can be done in the continuous kiln, yet some of us maintain that cheapness is carried too far in this case and the community as a whole would be served better with a more thoroughly prepared and burnt product. The day will come when our Chicago standard of quality must be raised with an equivalent increase in price. As long as the contracting public insists upon an exceedingly cheap product, there is no hope of improvement, but it would be well if some attempts to improve this state of affairs were made, for the defenders of concrete are not slow in pointing out the defects of clay products.

There are so many high grade building brick made in Illinois outside of Chicago that we prefer to think of them as the standard quality.

Makers of stiff mud bricks will find it advantageous to devote more attention to hollow bricks, the use of which in construction is bound to increase at a rapid rate. Even now quite a number of manufacturers are finding this produce a well selling commodity. Hollow bricks are invaluable for partition walls and similar purposes. Again, special shapes of hollow bricks, such as radial bricks for chimneys, air-shafts, sewer-tunnels, ought to find a ready sale.

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* Read at the 31st Annual Meeting of the Illinois Clay Manufacturers' Association held at Champaign, Ill., Jan. 19, 20, 21.

Front and Face Bricks: Until quite recently we understood by front and face bricks, only the formal dry-pressed or re-pressed brick of exact shape and uniformity in color. But fortunately times have changed and the term front brick has come to include also the well made soft and stiff mud brick as well, which need not be perfect in shape nor boast of uniform color. This gratifying change in the attitude of our architects testifies to their skill in handling clay products in which they are unexcelled by those of any other nation. They have been quick to see the wonderful possibilities offered by burnt clay and I believe I cannot be accused of exaggeration when I say that the era of clay architecture has just begun.

In this connection a great field is open in the state of Illinois based upon its clay resources. Here we have red burning clays and shales which by thorough preparation, shaping into well made bricks and skillful burning we can convert into splendid front bricks. We can do this by means of the dry press or the auger machine. Each of the two kinds of bricks has its own beauty; the granular effect of the dry pressed brick is just as necessary to the architect as the more vitreous surface of the stiff mud produce. By varying our method of firing we can turn out from the same clay either a clean red or all shades from chocolate to black. We can produce a smooth produce or the rough Devonshire bricks. With this variety of possible effects there is no reason why our cities and towns should not be built up of burnt clay if the merits of our products are brought before the public in the proper manner.

Again in the large deposits of No. 2 fire clays we have a means of manufacturing light colored buff and gray bricks, or by suitable firing, flashed bricks, equal to the best products of Ohio and Pennsylvania. Furthermore, by perfecting our methods of applying colored layers of clay upon our bricks during the operation of pressing, as it is now being done in three Eastern states, there is no reason why Illinois should not produce its share of polychrome bricks, blocks and tiles. By means of engobes and glazes the field is extended still further so that the demands of even the most exacting architect may be satisfied. Lacking the natural stone of its sister states, burnt clay becomes the most fitting building material of this state.

Paving Bricks: The reputation of the paving bricks of this state extends throughout the Union and the appreciation of vitrified bricks as a paving material grows from day to day, yet to me it seems as if even the use of this valuable product had been just begun. With the complete realization of the importance of good roads for both city and country, brick will be a still greater factor. If one compares the excellent brick paved roads, crossing Holland and Oldenburg in all directions with the average Illinois mud road, the difference in the cost of hauling farm products is strikingly illustrated. Illinois, lacking in a large part of its territory the usual road making materials, will be compelled to resort to the use of bricks, even though the latter are not of the high quality required in the city streets. Many clays in this state might be manufactured into bricks satisfying all the demands of a paving material for country roads, and surpassing in durability every other kind of paving. We must remember in this connection that the roads of Holland and Oldenburg are paved with bricks made from the surface clays of the glacial plains. A gratifying beginning has been made in the matter of paving country roads in Cuyahoga County, Ohio, where many miles of brick pavements are observed.

There also is no doubt but that the high fuel cost peculiar to this industry will be reduced at least one-half by the use of the continuous kiln. Closely allied with paving brick are all other impervious bricks such as sewer bricks, etc., whose use will grow with the constantly growing realization of perfect sanitary requirements.

Sewer Pipe and Hollow Ware: Although sewer pipe can be profitably manufactured in this state and of high quality, this industry probably will have a more difficult position to maintain than its sister industries, owing to the vast amounts of excellent, easily accessible clays in adjoining states and the perfect organization of the companies manufacturing this product. Yet by the proper utilization of modern labor saving devices and with cheap fuel there is no reason why the domestic demand should not be fully supplied.

The production of hollow blocks for cheap construction is an industry which deserves greater attention than it now receives and in this connection the manufacture of conduits might be carried on profitably. There is much room for the mechanical development of hollow blocks suitable for various purposes such as storage bins, etc. It would be profitable to follow the lead of Ohio along this line where these industries have developed to enormous proportions.

The drain tile industry is already well established but needs to be strengthened as far as the manufacture of large size tile is concerned in order to compete successfully with the cement tiles. Close economy and co-operation between the clay tile manufacturers are urgently needed.

Fire Proofing: Here we find an industry already well established and organized but which is capable of immense expansion. With the realization of the great need of really fire proof structures a large demand for this product is bound to arise and it must be met. It is an industry, however, which requires considerable business skill in pushing into the market and which cannot be conducted on narrow lines. There is also much room for technical improvement. No attempt should be made to use a material which is not a No. 2 or No. 3 fire clay. The writer has heard of fire proofing material which went down at cone 2 and, of course, this could not be called fire-proofing in its legitimate sense. The ingenious manufacturer here has a large scope for his inventive capacity in designing special shapes, both for fire-proofing and insulation purposes.

Roofing Tiles: With the increasing wealth of our citizens and the appreciation of the beautiful, the demand for roofing tiles of high quality is bound to arise and on the other hand a field is opened by the competition of clay tile with slate as a cheap roofing material. There are hence these two classes to be catered to for which the market can be readily developed.

Yet we must bear in mind that this field must not be entered into lightly. The roofing tile industry requires considerable technical skill and a thorough understanding of the roofing problem. In addition, the prejudice of the roofers who do not know how to lay clay tiles, must be met constantly and this is a far more serious obstacle than appears at first sight. It is very doubtful, indeed, whether a manufacturer with small means is justified in going into this business unless, perhaps, he can undertake to lay his own tiles.

It is one thing to make the coarse tiles of Europe which are heavy and require so much mortar that the roof becomes entirely too heavily loaded for our usage and the light, American tiles of exact shape which are demanded by the architects. Yet the fact remains that the roofing tile industry is bound to grow and is well worth the attention of those who realize its possibilities as well as its difficulties. The writer would not advocate the making of roofing tiles as an adjunct to the manufacture of drain tiles, except, perhaps, in rare cases where the clay is of especially high grade.

Terra Cotta: Illinois, though it has but a few terra cotta plants, may well be proud of them. The quality of their product is unexcelled anywhere. As to the question of the development of the terra cotta industry there is doubtless room for growth, but we again must keep in mind distinctly that this branch of the clay industry requires a high grade of technical and artistic skill, considerable capital and a decidedly superior degree of business initiative. Those who possess these attributes and realize the great, in fact, unlimited possibilities of terra cotta could not be kept from entering upon this business, others had better not attempt it. Many a plant has begun with the high sounding name of terra cotta company which ended by making good honest bricks. There is a distinct field, however, for a limited production of terra cotta using as much as possible machine molding and pressing for the simpler terra cotta shapes in connection with the front brick business. By the judicious selection of the simpler standard architectural shapes the architect is given sufficient scope for carrying out extremely satisfactory schemes, and in this way a terra cotta department becomes part of the brick works, as is the case with many European plants. At the same time the execution of the original designs remains the business of the terra cotta works proper.

In this manner the cost of terra cotta may be lowered by the adoption of mechanical means of shaping wherever possible, thus enlarging the market and benefiting the industry as a whole. However, here also, we must remember that precise and accurate work is demanded. Slip shod work is worse than useless and will do more harm than good. Together with the mastery of the mechanical part must go hand in hand a thorough knowledge enabling the manufacturer to produce durable and beautiful engobes and glazes wherever needed.

As has been said before in this field of polychrome decoration the clay products excel all other building materials and by the proper use of available means cities may be built up which are free from monotony of style and possess the great advantage of lasting durability. In order to accomplish all of this the clay product manufacturer must take the initiative. He must be able to convince the architect of what he can do and he must do missionary work of the most effective kind. This is a far easier task in this country than anywhere else, since here we deal with open-minded men who are not hidebound by traditions.

In Europe the clay workers are now advocating the establishment of chairs in clay architecture at the various technical schools, a plan which certainly is commendable.

Floor and Wall Tiles: Together with the use of all other structural materials the field of floors consisting of hard and impervious clay tiles awaits still greater development. Any one who has had the privilege of seeing the magnificent work done along this line by the plants at Mettlach, Dresden, the Doulton works and many others in Europe is compelled to concede that this field is indeed well worth developing. This movement is accelerated by the modern ideas of sanitary perfection which are growing very rapidly in the public mind. In this connection it might be said that though we have produced magnificent floor tiling in this country, the demand for more modest and cheaper tiling has been sadly neglected. Illinois has the clays needed for this line of work and though it may be necessary to import the strictly white clays, feldspar and other fluxes, you are not worse off than other states in which this manufacture is carried on. I would make a special plea for the production of mellow colored, steel hard tiles produced from the No. 2 fire clays of which there is an abundance.

As to wall and mantel tiles the field again is exceedingly great and leaves great room for intelligent development. I do not refer to the well known bright glazed tile so much as to the dull and matte glazed products of which the Rookwood Pottery is so magnificent an exponent. Though it may not be given to many concerns to reach the artistic perfection of the last named concern, yet there is a wide field for a modest, well made product.

It is interesting to note in this respect the wonderful work being done in Europe at present with hard burnt, underglazed tiles for polychrome outside decoration. I need call attention only to the great historical painting executed in this manner on one of the public buildings in Dresden, the work of Minton in England and others. Here we have art perpetuated in the truest sense of the word.

Fire Brick and Refractories: The strenuous development of mechanical stokers, metallurgical furnaces of all sorts such as blast and open-hearth furnaces, zinc and gas muffles have created a demand for material of the very highest quality, which is not only made of the very best material but which also is compounded and built up with the greatest intelligence. The question of the proper treatment and composition of refractory products is quite often sadly neglected by manufacturers and this point is one frequently brought to my attention. Illinois has excellent fire clays and there is no reason why the refractory industries should not be built up. As the industrial centers move westward the demand for fire brick products is certain to increase and must be met.

Stone Ware: Although the stone ware industry of Illinois is well established and produces ware of excellent quality, yet one cannot help but wish that the fine stone ware clays of this state would be put to still more extensive uses. There is no cheap clay which responds so readily to different treatments and which could be made the basis of so large a variety of products as these No. 2 fire clays and if the writer is not mistaken these clays will soon be the foundation of a variety of clay products ranging from pottery of a higher grade than stone ware to enamelled bricks and tiles, and including chemical stone ware, sanitary ware and electrical insulation. The fine working quality of the clays from the Whitehall and Monmouth districts, the ease with which they dry and burn will certainly render them more and more important.

In the stone ware districts of Germany these clays are now being blended with some flint, kaolin, feldspar and magnesite and they now produce from these bodies a kind of vitrified pottery, of the grade of semi-white ware which, being provided with an excellent glaze, seems to find a good market. It is sold in the form of kitchen ware of all sorts, filter jars, apothecary pots, umbrella stands, etc., and some of it belongs in the class of art ware.

Again there is no reason why electrical goods of all kinds from switch boxes to high tension insulators should not be produced from stone ware bodies. Also there is no excuse for the importation of the large quantities of chemical stone ware used so largely in many of our industries. All of this ware could be produced from Illinois clays.

White Ware and Porcelain: The writer is somewhat doubtful as to the prospects of beginning the manufacture of white ware in this state considering the present status of the industry as a whole which suffers most decidedly from overproduction. It seems as if Ohio, and New Jersey will still maintain their lead along this line. There are exceptional conditions, however, under which such plants might pay.

The case is different, however, in regard to porcelain. In this direction the competition is not as vigorous and a fine line of such ware will pay wherever it might be located within reasonable distance from the markets. There is no reason why Illinois should not build up a porcelain industry since it would not operate under less favorable conditions than, for instance, Ohio. The fact must be faced, however, that in undertaking the manufacture of porcelain the quality of the goods must at least be equal to that of the best porcelain made in the East. Inferior grades would fail here just as certainly as they would there. Electrical porcelain might likewise be manufactured here practically as cheaply as in the eastern states and with the development of water power in the western states it would be closer to the market than the other manufacturers, with the great advantage of handling the business through the largest inland city.

The development of the Illinois industries as outlined by this hasty sketch depends upon the development of the clay resources of the state, technical intelligence and business initiative.

Illinois has clays of all kinds up to Kaolin, it has fire clays of all grades, enormous deposits of excellent silica and plenty of coal. With these resources as the foundation, by strengthening the technical organizations, such as this body, so that it will embrace not only the brick and tile manufacturers, but all clay product manufacturers and finally by the development of the technical school at the University of Illinois, this state will rise rapidly as regards the magnitude of its ceramic industries.

CLAY PRODUCTS OF THE UNITED STATES

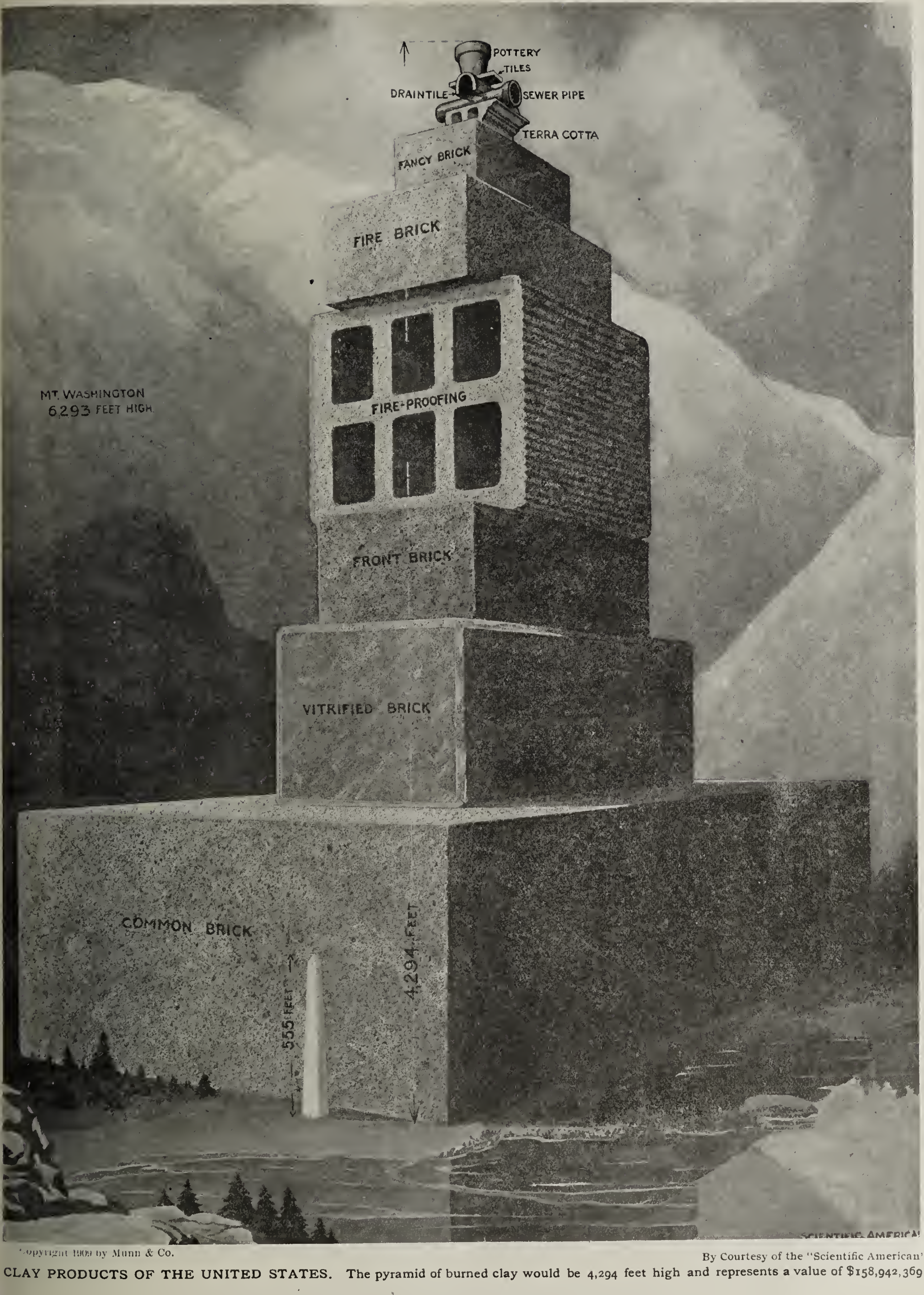
Bricks have been found as old as 4000 B. C., so that their use is coeval with the birth of history. In the Middle Ages, with the rise of Gothic architecture the use of brick greatly declined. It was not until the reign of Queen Elizabeth that the manufacture again flourished in England, and it was not until 1625 that bricks began to be made of uniform size, says the Scientific American.

In this country brick were probably first burned in the colony of Virginia as early as 1612, says Charles E. Hall in an interesting Bulletin of the Bureau of the Census. In New England brick and tile making seems to have been followed as an independent calling about the year 1647. Though the product was of good quality the industry did not thrive, as money was scarce and timber plentiful, and it was not until after the revolutionary war that home-made bricks came into general use. With increasing prosperity the desire and necessity for more substantial structures arose. The growth of the industry from year to year naturally provided a stimulus for the invention of machinery that would produce better brick, new shapes, and different sizes; and in turn these new inventions contributed to further the growth of the industry. The earliest record of a patent issued by the United States Patent Office for brickmaking is dated May 15, 1800, and was for a brick and tile machine invented by G. Hadfield, residence not recorded. Other patents issued about that time were one to E. Miller, July 17, 1802, for a brick machine; one to N. and P. W. Miller, January 5, 1804, for a brick and tile machine; one to W. Hodgson, Richmond, Va., May 22, 1805, for an apparatus for making tile, brick, etc.; and one to J. F. Gould, Newburyport, Mass., March 1, 1806, for a brick machine. The first patent granted for a brick-kiln was issued to H. Read, of Kensington, Pa., June 17, 1840; and the first for a brick dryer, to S. M. Parish, of Baldwinsville, N. Y., August 16, 1864.

Although much the same process for making brick and tile has been used for ages, the evolution of the industry through the use of improved methods and machinery has brought about a great change in the character of the product. It is a long stride from the use of hand pick and shovel to steam shovel in uncovering the clay bed; from the old-fashioned ring pit to the machine that grinds, tempers, and moulds; from the use of a hand mold to the machine with a capacity of 100,000 bricks per day; from the open air system, or a weather beaten drying shed, to the utilization of artificial heat for drying; from the temporary to the patented continuous kilns; and from the poorly made product of years ago to the firm, straight-edged, and otherwise well finished product of to-day. Of the $119,956,959 capital invested in this industry, the machinery, tools, and implements represent $33,295,324, or 27.8 per cent, an increase in five years of $16,045,486, or 93 per cent.

Common Brick.—Enormous quantities of common brick are manufactured in all sections of the country. Surface clays are generally used, and more attention is given to the volume than to the color and general qualities of the product, as the price is low and the brick used mostly in ordinary wall construction and foundation work.

Sand-lime Brick.—The sand-lime brick industry has passed the experimental stage, and though still in its infancy there is every reason to believe that it will eventually rank among the foremost of the country. The successful manufacture of sand-lime brick in foreign countries appears to antedate that in this country by several years. According to United States Consul-General Mason, at Berlin, the discovery that freshly pressed bricks of sand and lime could be hardened in a few hours by heat and pressure of steam was made in Potsdam, Germany, about 1880. Plants



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By Courtesy of the "Scientific American"

CLAY PRODUCTS OF THE UNITED STATES. The pyramid of burned clay would be 4,294 feet high and represents a value of $158,942,369 on a large scale were subsequently constructed, and the industry extended throughout Germany and Great Britain. In the United States the industry has grown from one plant, established in Michigan City, Ind., in 1901, to fifty establishments in 1905. In some instances these brick were made in establishments having clay products as their chief output, while in others they were products of plants exclusively confined to the manufacture of sand-lime brick.

Red Front Brick.—In the production of red front brick great care is exercised in the selection of raw materials and in the process of manufacture. The clay must be well tempered; the brick molded free from flaws or sand cracks; the method of drying be more complete than for common brick; and the repressing and subsequent drying, setting in kiln, and burning, skillfully and systematically managed. This additional attention necessarily increases the cost of production. Every State reported the manufacture of red front brick except Florida, Nevada, South Dakota, Vermont, Wyoming, and the Territory of Arizona. The State of Pennsylvania ranks first in value of product, New Jersey second.

Fancy and Ornamental Brick.—Fancy colored and ornamental brick are primarily pressed brick. The different shades of color in the former are produced by the addition of artificial materials or by the manipulation of the kiln fires, while the distinguishing feature of ornamental bricks are the designs in relief or in intaglio upon the surface to be exposed.

Fire Brick.—As the name implies, fire brick are used where intense heat must be withstood, as in cupolas, blast and glass furnaces, coke ovens, locomotive fire boxes, etc. The utility of the appliances just mentioned depends largely, if not altogether, on construction out of materials which will stand intense heat without fusing, cracking, or yielding in any way.

A new fire brick made from ashes has been produced by a Michigan firm. The ashes are united by a powerful binder, molded, and the product conveyed straight to the drying room. It is claimed that the brick are ready for laying five days after manufacture; that they have been tested in fire and water with satisfactory results; and, further, that the product is two-fifths lighter than terra cotta, and yet stands considerable crushing force.

Enameled Brick.—These bricks are ornamental, and in addition to being used for external decoration in the construction of buildings, are extensively used for sanitary purposes, their glazed and vitreous surfaces rendering them waterproof and easy to clean. As the surface of the brick to be enameled must be smooth and free from sand, pressed and fire brick are most often used.

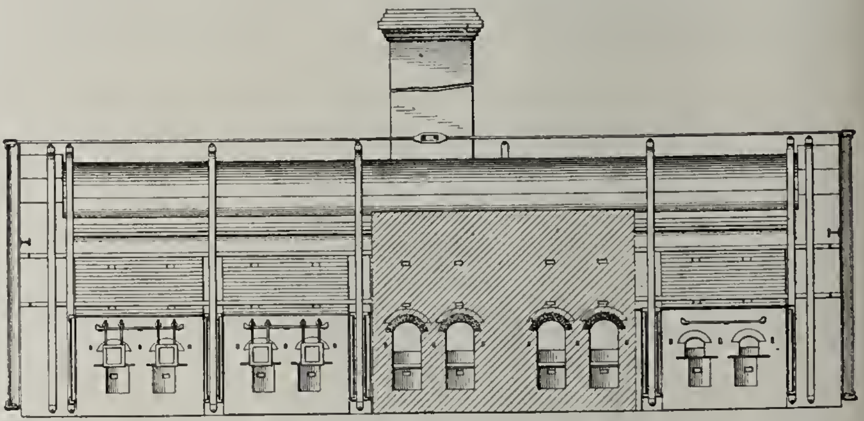
Hollow Building Tile and Blocks, and Fireproof Brick.—On December 9, 1856, a patent was issued to M. and J. H. Buck and F. A. Cushman, of Lebanon, N. H., for a machine for pressing hollow building brick or building tile. This industry, though yet in its infancy, is rapidly growing in importance, as the product is essential to the construction of modern fireproof buildings.

Possibly nothing has contributed more to the demand for burnt clay products, and brought more clearly to the attention of the public their value as a fire retardant, than the recent great fires in Baltimore, Rochester, and San Francisco. Without considering, however, these occasional catastrophes, it is estimated that the United States yearly sustains a fire loss of $250,000,000, a sum almost double the combined value of all clay products manufactured in this country during the same time and nearly three times the total value of all the brick, fireproofing, terra cotta, lumber, hollow building blocks or tile, and roofing, floor, and encaustic tile. With such an enormous annual property loss, and with the thinning out of the forests of the country, it is reasonable to believe that a change in building methods is imminent, and that the new era of construction will be of immeasurable benefit to those engaged in the manufacture of burnt clay building materials.

It is claimed that the annual fire loss in this country during the past five years amounted to about $2.50 per capita, as against only 33 cents per capita in the larger European countries. This unsatisfactory showing for the United States has resulted in a growing demand for a fireproof brick that can be used in the construction of moderate-priced dwellings, and several large plants are now making a specialty of such an article.

Drain Tile.—The manufacture of drain tile also dates back to early ages, and many instances of its general use by the ancients have been found. That it was used, probably in a crude form, by the early settlers of this country can not be doubted, as patents were issued for its improved manufacture in the year 1800.

Pottery.—It is recorded that a white ware was producer at a pottery erected in Burlington, N. J., in 1685, by the American agents of Dr. Daniel Coxe, of London. However, it is not likely that the ware made at this pottery was white, general opinion being that it was yellow and cream colored, as at that time no other ware was known except the porcelain which came from China, and was known as "China ware." Ordinary household pottery and ornamental vases for flowers were made in West Whiteland, Chester County, Pa., as early as 1753; a pottery and glass works was in operation in Germantown, New Quincy, Mass., in 1760; and a pottery in South Carolina in 1765. Cream colored ware, both plain and decorated in blue, was made in Philadelphia in 1770.



Wilson Kiln No. 1

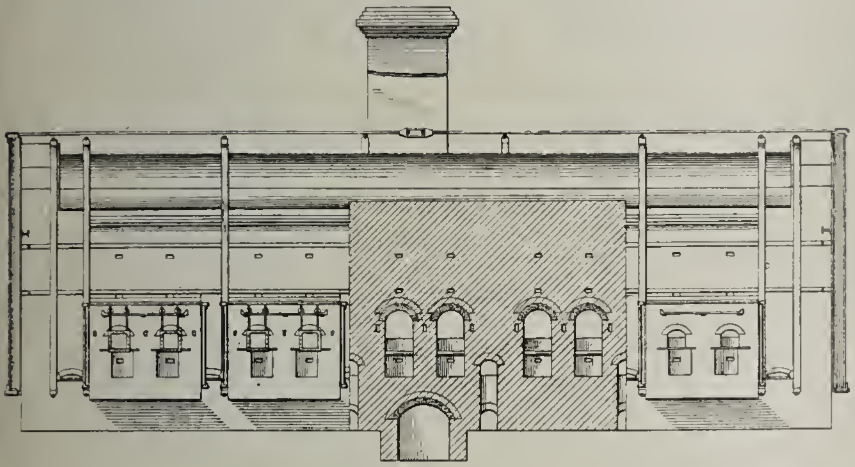
It appears, however, that the potteries established before the revolutionary war did not meet with marked success, and that this industry, like the manufacture of brick, did not assume commercial importance until after that war, when a period of new economic and industrial life began. About this time many enterprises were launched, including a number of potteries.

The total value of the products of clay in the United States in 1907 was $158,942,369, divided as follows:

Common brick	9,795,698,000	$58,785,461
Vitrified paving brick	876,245,000	9,654,282
Front brick	585,943,000	7,329,360
Ornamental brick		361,243
Enameled brick		918,173
Fire brick		14,946,045
Stove lining		627,647
Drain tile		6,864,162
Sewer pipe		11,482,845
Architectural terra cotta		6,026,977
Fireproofing		3,162,453
Hollow building tile or blocks		1,088,165
Tile, not drain		4,551,881
Miscellaneous		3,000,201
Pottery		30,143,474

THE WILSON KILNS AND DRYER

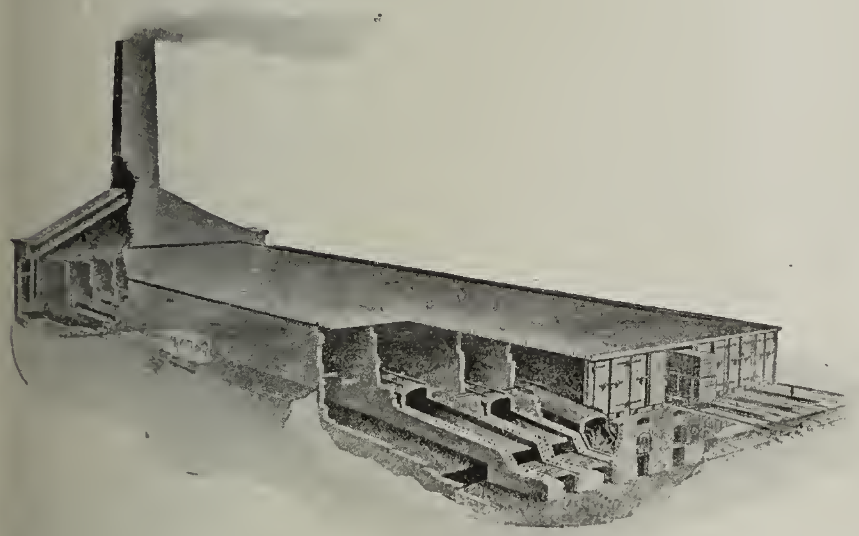
There is nothing about a brick plant that can put a firm or company on the "no dividend" list more easily than that of either the kilns or dryers, unless it be the lack of clay. Therefore, it behooves every one to look into this subject very careful, either if they are to build a new plant or if they have an old one that the kilns or dryers, or both, are not doing the work and turning out the right percentage of good merchantable ware.



Wilson Kiln No. 2

It hardly pays to "build any old thing" and call it a kiln when there are such men as Thomas M. Wilson and others of his type in this country, who have made a life study of kilns and dryers and have monuments all over sections of the states where they have worked. Each plant that he builds shows his masterly hand and is truly a monument showing his ability.

Mr. Wilson is the inventor and patentee of all the Wilson Kilns and Dryers that are now being sold and put up by the Wilson Kiln & Dryer Company, 1714 Wilton Street, Philadelphia, Pa., including the smoke consuming furnaces which will burn brick without smoke. Also the continuous waste heat system which does away with the smoke nuisance.



Wilson Radiated Heat Dryer

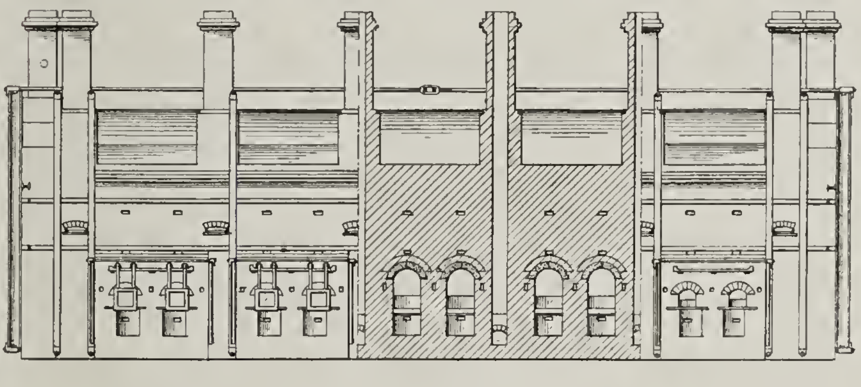
The first illustration, No.-1 kiln, was designed and is now being used to burn high-grade fire brick and silica brick, as well as building brick. It is possible with this kiln, with the combination smoke consuming furnace, to vitrify silica brick, or to produce 3,300 to 3,500 degrees, Fahrenheit, without any difficulty.

The second illusrtration, No.-2 kiln, might be described in this way. It was designed for, and is being used in cities where the manufacturers might have trouble with the smoke ordinances. This kiln is controlled absolutely by dampers before the smoke reaches the stack, which would allow placing any number of kilns on a high stack without one kiln interferring with another. This would practically eliminate the smoke nuisance around a brick plant.

The third illustration, No. 3, was designed for the burning of building and paving brick and has proven to be one of the most satisfactory kilns ever built. It is supplied with a combination furnace, which practically does away with the smoke nuisance. This kiln is recommended by Mr. Wilson, to any one who has trouble with white wash, it is especially good. Several places it has been built alongside of other kilns where this trouble has occurred, the other kilns disappearing thereafter, this kiln taking their place, and the brick makers white wash trouble entirely gone.

All three of these kilns are now in practical use; they are not experiments, but have had plenty of time to be tried out in a number of the best plants.

The fourth illustration is the Wilson Radiated heat dryer. It has a very large amount of radiating surface, as much if not more than any dryer in use at the present day. They are economical in construction and in operation, and have proven very satisfactory in the several places where they have been installed.



Wilson Kiln No. 3

Mr. Wilson would be glad to correspond with any one who is in trouble with the smoke nuisance, white wash, low percentage of good brick, or those wishing to put in new kilns or dryers. He has had twenty-five years practical experience in the brick business and his judgment in building up-to-date successful plants is the best. The Wilson Kiln & Dryer Company use all of his patents as well as his assistance in reference to any plant.

Some of the complete plants the company have built are the W. J. Rainey Coke Co., 40,000 capacity fire brick plant at Uniontown, Pa. Robinson Clay Products Co., 40,000 capacity fire brick plant at Akron, Ohio. Pittsburg Coal Co., 40,000 capacity fire brick plant at Pittsburg, Pa. Bessemer Limestone Co., 100,000 capacity, building and paving brick plant, Youngstown, Ohio. Somerset Brick Co., 35,000 capacity, building brick plant at Somerset, Ohio. Watsontown Brick & Clay Co., 100,000 capacity, building and paving brick plant at Watsontown, Pa. Also kilns at plants at Jewettsville, N. Y., Youngsville, Bridgeville, Pittsburgh, Reynoldsville, Punxsutawney, Orvis and Clymer, Pa., and at South River and Red Bank, N. J.

*THE SALESMAN VS. THE CATALOG

By C. B. Sharer, Sales Manager for the American Clay Machinery Co., Bucyrus, O.

At the request of your worthy secretary, I have prepared a paper in which I shall simply give my views on the above question and endeavor to explain why, in my opinion, it is neither practical nor profitable to sell clay machinery by catalogue without the use of salesmen.

The purpose of the catalogue, as well as any other printed advertisement, is simply to call attention to the machinery. An attractive advertisement will be noticed more readily and on that account is more effective. The catalogue goes a step farther than an ordinary advertisement. inasmuch as it more thoroughly illustrates and describes the complete line of machinery. At the best, however, a moderate description only can be given and there are many points left undecided in the customer's mind, even after reading the catalogue carefully.

When the catalogue or the advertisement has attracted the customer's attention and has been carefully read, I consider that its work has been accomplished. It then becomes the duty of the salesman to interview the customer and, by painting a word picture, illustrate so clearly and thoroughly the details of the construction of the machinery, the method of installing, the manner of operating, and, above all, the benefits to be derived from the use of the machinery, that the customer will have a picture in his mind's eye which will enable him to appreciate the value of the machine to him.

This picture painting by word of mouth is in reality the object of the salesman during his interview with the customer, and the more successfully he paints, the more successfully is his salesmanship. To paint successfully, he himself must first have a picture in his own mind. He must be thoroughly familiar with the line of machinery which he is selling; he must know the details of its construction; he must know the various uses of the machinery and the manner in which it should be installed and operated in order to accomplish certain results. He must know the results which can be obtained under various circumstances and conditions. With this knowledge and this picture in his mind, he is prepared to interview the customer, and, after learning the conditions and circumstances under which the machinery is to be used and the results which the customer expects, he will then be able to paint his picture well and clearly for the benefit of the customer.

The qualifications of a successful clay-machinery salesman today are much more difficult to meet than under the conditions which existed years ago when the manufacture of clay machinery was in its infancy. At that time there were but few different kinds of machines and these were supposed to be quite capable of making first-class products from practically any kind of clay. Experience, however, has been a wise teacher and the clay machinery has developed. Today we have machines which were not dreamed of years ago but which have been developed through the necessity of supplying the clay manufacturers with machinery which would give results under various conditions. The salesmen have developed and kept pace with the advance in manufacture. They themselves are responsible for the development of many new and improved machines. Circulating among the trade, and learning the requirements of the clay manufacturers, they are able to report to the factory the conditions existing in the field and give some idea as to the class of machines which are necessary to meet the requirements of the clay manufacturer.

The salesmen are not mechanical engineers as a rule, and their training has not been such as to enable them to enter the shop and design the mechanical features of a machine which they may have in their mind as being required to accomplish certain results. It has, therefore, been the duty of the mechanical engineer in charge of the factory to perform this part of the work in the development of new and improved machinery. The salesman, however, can appreciate the mechanical features after the machine has been developed and this knowledge enables him to more clearly picture the advantages of the machine to his customer.

The successful salesman today, in this line as well as in any other, must be thoroughly in earnest in his work. He must be honest and straightforward in his statements to the customer and energetic and enthusiastic in his efforts to paint his picture for the benefit of the customer.

The inquiries received for clay machinery are often difficult to handle and a letter of explanation in reply to an inquiry, no matter how carefully prepared, may be seriously misleading, due to the fact that the customer may have a partially completed picture in his mind's eye, which prevents him from understanding and appreciating the explanation given.

The salesman on the ground, being a judge of human nature, first determines the standpoint from which the customer will view the matter and then performs his picture-painting accordingly, with the result that both he and the customer are viewing the matter from the same standpoint. This method of salesmanship must be effective: much more so than a catalogue followed by carefully prepared correspondence. Results plainly show that a well-organized sales department with a corps of competent salesmen will produce more satisfactory and profitable business than the best-developed mail-order department ever established. Some lines of machinery may perhaps be marketed to a limited extent by mail. Clay machinery, however, due to its variety and the various conditions under which it is installed and operated, cannot be safely marketed by mail.

The number of contracts which have been closed by mail in past years is very small indeed. The personal attention of the salesman on the ground is necessary in order to properly protect the interests of the manufacturer and make sure that an equipment of machinery is sold which is adapted to the circumstances and conditions under which it is to be operated and which with proper manipulation will produce the results required by the customer.

The number of salesmen required by any particular clay-machinery manufacturer will be governed entirely by the

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*Read at the National Clay Machinery Association meeting held at Rochester, N. Y., Feb. 1. 1909 class of machinery he is making and the capacity of his factory. The sale of certain kinds of clay machinery is at the present time limited to certain districts and territories, due to the fact that the clay in these territories can be better manipulated by that particular class of machinery. Therefore, the manufacturer who produces but one line of machinery should limit his corps of salesmen to a sufficient number to properly cover those territories in which he can reasonably expect to be more successful with his machinery and meet the demands of his customers. The greater the line of machinery manufactured, the greater the territory that can be covered, the greater the number of prospective customers, and, consequently, the greater the number of competent salesmen required to market the full output of the factory.

In the selection of salesmen, competency should be the first consideration. A good talker is not necessarily a good salesman. Experience in one line does not always qualify a salesman in another line. To meet the qualifications of a successful clay-machinery salesman at the present time a general knowledge of the clay industry is essential. This, combined with a complete knowledge of the line of machinery which he is handling, together with a light heart, a clear conscience, and a disposition to follow the "Golden Rule," will enable a salesman to conduct the business in his territory successfully and bring profits to his employer.

It is too often the case that a salesman's energy and disposition to work are measured by the encouragement he receives from the office. This is a condition which can be remedied and which by all means should be regulated so that the full effect of the salesman's ability is secured. An ill-natured or grumbling salesman is never effective and should be removed from the force. The clay-machinery salesman may legitimately claim to have "troubles of his own" and is fully entitled to due consideration from the office. He should at all times be encouraged and never annoyed by unpleasant correspondence from the factory. If he has committed an error, it has not been intentional but has been done with the welfare and interests of the company at heart. Therefore, he should not be hastily criticised, but should be given an opportunity to explain fully the conditions surrounding the incident, when in a majority of cases, it will be found that severe criticism is not justified.

A successful salesman will not be unreasonable in his demand for consideration at the office. But unless he receives proper consideration, he is apt to become discouraged and his work will be less effective.

A satisfied customer may be classed among the assets of a company. The salesman fully realizes this fact and it is his aim to build up the assets of the company along this line. A dissatisfied customer is a liability of an unknown quantity. He may cost the company large sums of money and the salesman, realizing this, endeavors to reduce the liabilities of his company in this line. Therefore, the correspondence between the office and the salesman, and the office and the customer, should be such as will assist the salesman in maintaining satisfied customers and removing dissatisfied customers from the list. If the office and the salesman work together in absolute harmony, their combined efforts will be effective and will result in the establishment of a satisfactory and profitable business in that territory.

Salesmen should work on a salary basis and devote their full time and best efforts to the interests of the company. Commission agents are poor salesmen and are never as satisfactory from a business standpoint as a salaried salesman, due to the fact that the interests of the company and the interests of the commission agent are not in harmony and it is but human nature for the agent to sacrifice the interests of the company to further his own. Therefore, he is never as reliable or as productive as a salesman working under the direct supervision of the main office.

I do not depreciate the value of the catalogue and the advertisements, but consider them accesssories to the salesman. They are a part of the assistance given by the office to the salesman. The more thoroughly and carefully the catalogue or advertisements are prepared and distributed, the greater assistance they are to the salesman. But no matter how carefully prepared or how attractively the catalogue is printed, the salesman is more effective in establishing and maintaining satisfactory business relations between the factory and the customer.

REPORT ON GEORGIA CLAY DEPOSITS

A report on the "Clay Deposits of Georgia," written by Otto Veatch, assitant state geologist, is now ready for distribution by the State Geological Department. The book is a comprehensive discussion of the clays of the whole state, and the subject is one which can hardly fail to be of general interest. The object of the work is primarily economic and is designed to advertise the clay resources of the state, yet, at the same time scientific accuracy and caution are maintained. The value of clay products and clay mined in Georgia amounts to approximately $2,500,000 annually. With vast resources of clays, suited for nearly any clay ware manufactured, Georgia, in coming years, should increase its rank among the states.

All varieties of clays are considered in the report, but especial attention is given to the extensive deposits of high-grade clays, kaolins and fire clays, Georgia possesses clays suitable for china ware, electrical porcelain, ornamental building brick, terra cotta, etc., and fire clay products, or, in other words, for the highest class of clay products. These deposits compare favorably in quality and extent with any deposits known in the United States, and warrant a more extensive development than they are now receiving.

In the preparation of the report, more than 200 clay samples from various parts of the state were collected and laboratory examinations made. In addition to the subject of clay, a short description of the beauxite deposits of Wilkinson county is included. The volume comprises 453 pages, contains three maps and is amply illustrated.

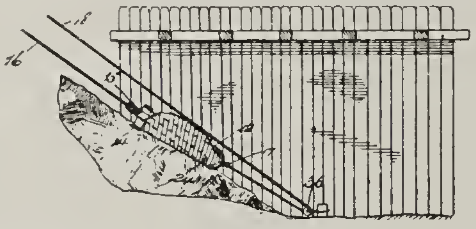
This report may be secured from Prof. S. W. McCallie, state geologist, by payment of the postage, 28 cents.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

905,153. Excavating Apparatus. Morris M. Defrees, Indianapolis, Ind. Filed Nov. 13, 1907. Serial No. 402,023.

Claim—In an excavating apparatus, the combination with an inclined floorway having a dumping opening situated at its upper end, a chute situated under said opening, a frame for supporting said inclined floorway, and supporting wheels upon which said frame is mounted to be portable, of an excavating scoop having its under side open adapted to be closed by said floor, centering guides situated at the upper terminal portion of said floorway, each of which is situated to extend along each side of and below said dumping opening whereby said scoop is directed centrally over said dumping opening, a draft rope connected to the rear of said scoop for returning said scoop into the excavation.

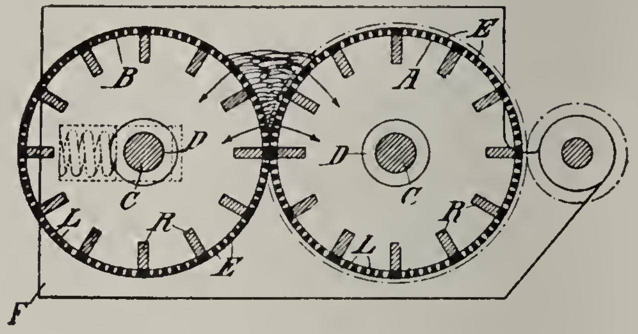


904,900. Mold for Forming Concrete Drain-Tile. Samuel L. Sheets, Paris, Ill. Filed May 2, 1907. Serial No. 371,510.

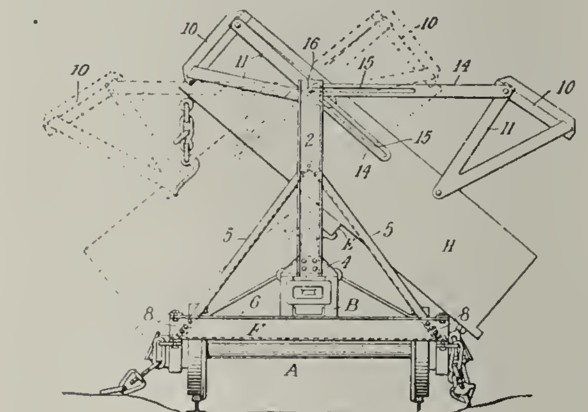
Claim—The combination in a form of molds for concrete drain tile, or sewer pipe, of a pallet, the semicircular cleats oppositely arranged on the pallet, a separate outside cylindrical shell divided vertically into two similar parts, the channel iron bands riveted on the outside of the shell sections near either end; the hinge of the channel iron bands with a bolt and nut hinge on one side of the shell, the hinged iron clasps, which fasten the sections of the shell together at the front edges of the channel bands; a separate collapsible shell divided vertically into four sections, the operating centerpost movable longitudinally in said shell by means of a hand hold, the collars arranged in sets of two at right angles to each other near each end of the centerpost, the collars riveted around the centerpost, the four sets of two arms each, pivotally joined to the collars with a bolt and nut; the turn buckles in the arms, the hinge of the arms to the shell sections by means of a bolt and nut through the angle irons, the angle iron riveted to the shell sections through the channel bands; the channel bands riveted to the shell sections on the inside near each end; the hinge of the channel bands by a bolt and nut, which join the three sections of the shell together; the one independent section of the shell pivotally connected to the centerpost by arms, said section being movable over the outside edges of the two adjoining sections of the shell, by means of the operating centerpost when the shell is expanded or collapsed; the hinge of the arms to the centerpost by means of a bolt and nut through the collar; the strap hinges joining the shell sections; two sets of arms connecting said shell sections to said centerpost, being arranged obliquely with respect to said centerpost, and the other two sets being horizontally arranged to said centerpost, when the shell is expanded; and the mold for the tile joint, all substantially as described and for the purpose specified.

909,133. Machinery for Preparing or Treating Loam, Clay, and the Like. Paul Baur, Brugg, Switzerland. Filed Oct. 12, 1905. Serial No. 282,409.

Claim—In a machine for mixing loam, clay and the like and for separating from the same stones and other hard bodies contained therein, the combination of the frame and two cylinders journaled in said frame in close proximity to each other with their axes of rotation parallel and movable one toward the other, each cylinder comprising a drum formed with cylindrically arranged ribs and a perforate detachable mantle surrounding the drum and attached to said ribs, and each cylinder being open at both ends to allow the free passage of the treated material, substantially as described.

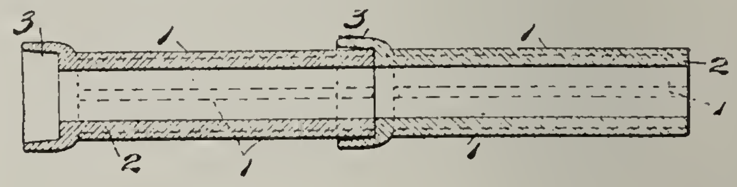


909,209. Two-Way Dump-Car. Allen E. Ostrander, New York, N. Y., assignor to American Car and Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed July 25, 1908. Serial No. 445,366.



Claim—In a two way dump car, the combination comprising a truck with centrally disposed girder, supports mounted thereon, a body pivotally mounted on said supports, gates pivotally mounted on said body—said gates comprising hangers—longitudinally slotted arms connected with said gates, rigid standards extending above said truck and means connecting said standards with said slotted arms.

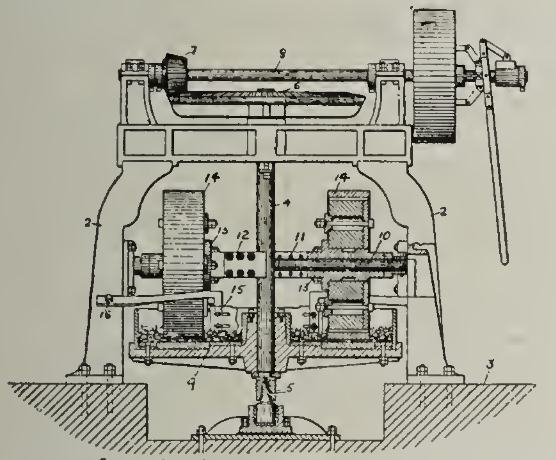
909,244. Sewer-Pipe. Charles M. Stratton, Toronto, Ohio. Filed Sept. 18, 1908. Serial No. 453,600.



Claim—As a new article of manufacture, a sewer pipe having a socket formed upon one end and provided with a plurality of longitudinally disposed ribs upon its exterior extending from the rear of the socket to the opposite extremity.

909,835. Process of Reducing Rock for Refractory Material. William Walker, Shields, and Harry W. Croft, Pittsburg, Pa., assignors to Harbison-Walker Refractories Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 27, 1907. Serial No. 385,885.

Claim—The process of reducing hard refractory rock, consisting in mixing the broken rock with a quantity of material in a finely divided condition, and then subjecting the mixture to a rolling crushing pressure, whereby said finely divided material forms a shifting support for the pieces of rock and facilitates its reduction.



The process of reducing hard refractory rock, consisting in breaking the rock into small pieces, adding a quantity of sand thereto, and then subjecting the mixture to a rolling crushing pressure, whereby the sand forms a shifting support for the pieces of rock and facilitates reduction.

ARE BEING HELD LIABLE FOR STOCK

Counselor Herbert Clark Gilson, as receiver for the Jersey City, N. J., Appleby Sand and Clay Company, has under way a series of suits for the recovery of money due on notes which were given in payment for stock of the company. Many of the best known persons in Jersey City will be defendants in the suits to collect the money on the stock issued. Mayor Wittpenn is one of the stockholders, but he will not figure in any of the suits, as he paid one hundred cents on the dollar for the stock he bought.

Tax Commissioner Julius C. Wittpenn, the Mayors' uncle, will be a defendant. Some of the stock voted free, the receiver will claim, was turned over to him by one of those receiving the free issue. As the stock was not paid for, and as Mr. Wittpenn is the present holder, he will be included among the defendants.

The Jersey City Appleby Sand and Clay Company was organized by Mr. Appleby and George C. Smith, now with the People's Banking and Trust Company, of Hudson City. The office of the company was at 713 Bergen avenue, Jersey City.

After having been in business some time the company voted about $100,000 worth of stock free for "gratuitious services." Those that got the stock were Emanuel Britten, Dr. William L. Pyle, James E. Pyle, Isaac V. Pierson, George C. Smith and the Appleby family. After that, either by bona fide sale or gift, it is alleged, some of this stock was transferred to the names of Julius C. Wittpenn, George R. Gardner, Isaac A. Smith, Joel Dickinson, Annie E. Dickinson, his wife; Emma W. Smith, wife of George A. Smith and daughter of Julius C. Wittpenn, and Robert W. Morison.

AN UNUSUAL RECORD FOR AND ENGINEER

Fred Fenning, engineer of the Rogers brick plant at Topeka, Kansas, has an unusual record. During seventeen years as a stationary engineer and fireman the only days he has lost from his work have been five Sundays.

FIREPROOF BUILDINGS

Reinforced concrete enthusiasts are prone to overdo the claims for that material when they assert, as most of them do, that in itself it is ideally or even practically fireproof. The "American Architect," the leading architectural journal of the country, recently devoted an entire number to the exploitation of concrete construction and illustrating the best work done in that material, but it conservatively states editorially:

". . . Finally it must always be kept in mind that concrete, while a serviceable fireproofing mixture, is not itself fireproof, and that in certain positions it must be protected by other fireproofing, whose function it shall be to absorb into itself the inevitable disintegration due to impinging flame—or flame and water in alternation. . . . "

Another writer in the same concrete number of that journal says: "Carelessness, indifference and irresponsibility seem to be the order of the day, and this is particularly so in the building trades. Where materials can be inspected after erection, as in brickwork, stonework, ironwork, etc., it is very hard to get even passably good results, but with a material that has to be taken on faith, like reinforced concrete, it requires a perpetually optimistic temperament to prevent undue anxiety from spoiling one's peace of mind. . . . The fireproofing of concrete structures deserves as much study as the fireproofing of iron structures. The advocates of reinforced concrete construction do themselves no credit and do their material a great deal of harm by claiming that concrete is a fireproof material. The simplest tests which can be made by a school-boy will prove that cement, after setting, cannot resist fire without detriment, and the point of absolute structural disintegration is detrimental solely by the length of time it is kept in contact with fire. A few briquettes, a kitchen range and a bucket of water will prove this in a most practical and satisfying way, and remove any lingering doubt one may have on the subject. . . . By protecting the structural parts of the (concrete) construction with this material (porous, terra-cotta, fireproofing tile) it is possible to construct a building of great fire-resisting capacity at a cost considerably less than if structural steel, fireproofed with the same material (porous, terra-cotta blocks) were to be used. . . . "

POTTERY MAKING AT THE SCHOOL OF INDUSTRIAL ARTS

While this is the first year pottery has been taken up in the Trenton School of Industrial Arts, the students are most enthusiastic and have turned out some highly artistic pieces.

There are 22 students in the evening modeling class and seven in the afternoon class. About twenty of these are paying special attention to pottery as a craft.

A student carries his piece of pottery through every process from the raw clay to the finished, decorated and glazed product. The school is equipped with a large muffled kiln, especially built for pottery firing. A two-horse motor for running the machinery has been installed and two especially constructed wheels for spinning the plaster models, one hand gizzer, one foot power throwing wheel and small glaze mill.

The clay used is best native and the glazesmatt, such as are employed on tecco and other wares.

While this is a new departure for the school, any special equipment provided for this branch, judging from the interest being displayed by the students, was well warranted. As a factor in education and art, pottery forms an important part.

Students in this department are under the care of Frank Guy Applegate, modeler, who is much pleased with the progress made and skill displayed.

CLAY RECORD.

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GEORGE H. HARTWELL, Editor

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Vol. XXXIV. MARCH 30, 1909. No. 6

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Did you send in your subscription as you were asked? If not, do it now.

In order to succeed you must have push. You can't even run a lawn mower without it.

In making an effort to know himself, the average man wastes a lot of time that he might spend in forming more agreeable acquaintances.

Enthusiasm is a lubricant that makes the wheels of trade go round; a grouch is sand in the bearings. Enthusiasm, like melancholia, is catching.

If you are contented with what you have done you will stand but a small chance of becoming famous for what you will do. You cannot stand still; you either must go onward and upward or backward and downward; you never can remain stationary.

Little by little the authorities are awakening to the fact that concrete is a most excellent thing when properly handled, but the most dangerous of all buildings materials if the slightest imperfection is allowed in it, is the words of that great authority, F. W. Fitzpatrick of Washington, D. C.

No man helps himself in slurring another in business at least. It is not good business. It tends to raise in the mind of a customer a question about the man who does it.

Remember always that publicity is a force which rightly used and directed, is of inestimable value and it can neither be evaded nor avoided, neither faked nor fixed. Remember this is the age of publicity, whose light beats upon the throne of an Emperor as clearly and boldly as it does upon the hearth of the humblest peasant.

PLENTY OF BUILDING EXPECTED THIS SPRING IN NEW YORK

The plans that are now being filed for apartment houses in Manhattan and the Bronx insure a large amount of brick-building in the spring of the natural order if business is not interfered with. Money is easily obtainable for approved operations, notably six-story elevator apartments, and it is said that many builders who were tied up a long time have cleared up and are now free to start new work. Some of the filings are no doubt in anticipation of possible changes in the building code, and may represent operations that may not be quite ready for contractors.

Reports from the Haverstraw shore bring surprises of the nature of empty sheds. The amount on hand is the smallest in many years. In Garner & Company's yards they are burning a 25 arch kiln, and also have 13 arches of green brick which with the winter dryer in operation will soon be walled up ready for the oil burning. Washburn & Company, Allison & Wood, DeNoyelles and Malley & Company have the largest amount of brick along the line. The number of brick in the arches above referred to are averaged at 50,000 per arch. The Haverstraw Messenger's annual estimate of the amount of material on hand on the Haverstraw beach amounts to 49,805,000.

The river is now open to West Point, and conservative shipments are being received (from Haverstraw. Sales amount to 15 to 18 cargoes a week and favorable weather. There are thirty-five covered cargoes here, which are practically sold. Demand for material is seasonably fair and cargoes are quickly dispatched after being sold. Quotations unchanged.

CLAYS, THEIR OCCURENCES, PROPERTIES AND USES

The second edition has just come from the press of Clays, by Heinrich Ries, Ph. D. Although a comparatively short time has elapsed since the appearance of the first edition, so much new material of importance relating to clay has appeared that it has been deemed advisable to incorporate as much of this as possible in the second edition.

The conents are:——Origin of Clay. Chemical Properties of Clay. Physical Properties of Clays. Kinds of Clays. Methods of Mining and Manufacture. Distribution of Clay in the United States. Alabama—Louisiana. Maine—North Carolina. North Dakota to Wyoming. Fullers' Earth.

The book is an 8vo, 554 pages, 112 figures, 44 plates, and is well bound in cloth. The price is $5.00. The Clay Record would be glad to supply all its friends with a copy at this price.

ACCIDENTS, DAMAGES AND LOSSES

The Standard Brick & Tile Co., Winnipeg, Manitoba, Canada, has assigned.

Steve Havritiza, a Hungarian, was killed at the plant of the Rose Brick Co., in Roseton, N. Y., by a post falling on him.

W. C. Pennock, an employe of the Kansas City (Mo.) Brick & Stone Co., was suffocated as a result of being buried under a pile of sand.

The cooling sheds and a portion of the dryer at the plant of the Union Brick Co., two miles east of Iola, Kansas, were destroyed by fire. Same will be repaired at once.

The Garfield (O.) Brick Co., is reported insolvent. It has been appraised by order of the court at $4,360. It cost originally $40,000 and has been idle for three years.

William Mann received a judgment of $5,500 for injuries received while blasting at the plant of the Phoenix Brick & Con. Co., of St. Joseph, Mo. A new trial was granted.

Geo. T. Butler, who lost his hand in a dry press at Ft. Wayne, Ind., is suing the Phoenix Accident Co., Detroit, Mich., to recover on a policy which he had at the time.

The jury in the damage case of Casteel against the Pittsburg (Kansas) Vitrified Brick Co., has reduced the damage to $1,500. A new trial will be asked for by the defense.

William S. George, president of the Canonsburg Pottery Co., suffered a stroke of paralysis at his home in East Palestine, O. He is also president of the East Palestine Pottery Co.

The property of the Nonpareil Brick & Clay Co., Nazareth, Pa., has been seized by the sheriff on an execution of $15,975, issued in favor of Alvin E. Frantz, trustee for the bondholders.

The Ligonier (Pa.) Silica Brick Co., which has been operating along the line of the Ligonier Valley Ry., has made an assignment for the benefit of its creditors. Reuben Miller Jr., of Pittsburgh, is the President.

CLAY AND RUBBER WILL BE TAKEN UP BY COLLEGE

Butchel college at Akron, O., next fall will make a specialty of rubber analysis and ceramics when the new Knight laboratory is completed.

It will be the only college in this country to have a special course in rubber. The course is especially for this college on account of Akron being the center of the rubber world, and as good rubber chemists are in great demand now, it is a great advantage for the Akron youth to obtain a fine education right at home.

Clay chemistry will also be specialized on. The clay industry is steadily growing and Akron is at the same time becoming an important factor in it.

The new Knight laboratory has not been completed yet. The structural part is completed; there remaining only the furnishing and equipping of the building. The latest styles of apparatus only that a chemical laboratory should have will be installed. Hence when the opening of this laboratory takes place this fall, Akron will have another institution of which she can be justly proud.

WEAK GAS PUTS UP PRICE OF BRICK

The shortage of natural gas in the Kansas fields last winter had another effect than the mere inconvenience to consumers in Kansas City. Now it is said the price of building brick has advanced a dollar a thousand because of it and furthermore the supply is short.

"The Kansas gas fields are buttoned up so strong that it is killing the industries," said C. P. J. Bryant, president of the Bryant Supply Company. "The cold weather of last winter was the direct cause of many brick plants shutting down. This has left the market short, causing a consequent increase in the price. Many of the plants have put in oil burners, which is a little more expensive than gas."

C. W. Reed of the Hydaulic-Press Brick company and Robert Nesch of the Pittsburg Vitrified Brick Company also said that the supply was short in Kansas City. They were of the opinion that the market would relax within a month. Supply companies and brick manufacturers in general did not believe, however, that the price would be much lower than at present.

Building brick is now quoted at $7 to $7.50 a thousand. A year ago the price was a dollar lower on all grades, but the demand, it is said, was much less. Because of the financial pinch building generally was curtailed in the territory of the Kansas fields at this time, leaving all the plants with a large supply on hand that was sold at a sacrifice. The large number of buildings erected in Kansas City in the last few months has taken up this supply and now the demand is greater than can be furnished. All local plants are taxed to their full capacity to supply contracts made several months ago. Brick dealers say that it will require from 80 to 100 million brick to supply the demand in Kansas City this summer and that very few can be brought in from the Kansas fields within a month, when the market is expected to become easier.

WILL OF MR. LAHEY DIRECTS FORMATION OF A STOCK COMPANY

The will of William Lahey of the Town of New Windsor, N. Y., a well known brick manufacturer, has been admitted to probate. Joseph A., Annie A. and Norah M. Lahey, son and daughters were appointed executors. Hon. Walter C. Anthony appeared as attorney.

By the terms of Mr. Lahey's will his estate is to be divided into six equal shares, one share for each of his six children. Joseph A. Lahey is to have one-sixth of the real estate and the real estate and personal property of the testator at East Windsor Hill, Conn., and one-sixth of all the brick sold therefrom and of the moneys due for brick so sold.

The remaining five-sixths, the testator directs, shall belong in equal shares to his six children in equal portions. In the next clause of the will the executors are named.

The testator then directs that his executors shall manage and control all of his property and carry on the brick business as he has done, until the youngest child shall become 21 years of age, or until the creation of a corporation, as directed below.

The testator directs that, as soon as possible, all property be conveyed to a corporation, which shall carry on the brick business, each of the children to have one-sixth of the stock of such corporation.

BRICK WILL BE CHEAPER AT HAMILTON

There will be competition in the sale of brick at Hamilton, Ontario, this year. The Builders' Supply Exchange having gone out of business. Last year the price of brick was $8.50 per thousand and this year it will be $6 per thousand.

IOWA RATE LAW TO BE ATTACKED

Attack on the power of the state railroad commission to fix rates under the Iowa distance tariff law is threatened from a new source as a result of the commission's refusal to overlook a violation of the law by the Milwaukee railroad at Sioux City.

The commission learned that a switching charge of $2.50 had been restored by the Milwaukee road between North Riverside and Sioux City, after the company had acknowledged that the rate was illegal and had cancelled it three months ago. At that time a brick maker whose plant is located at another suburb of Sioux City complained to the commission that he was required to pay the distance tariff while his competitors at North Riverside were granted a switching charge, although both were outside of the Sioux City yard limits.

Without waiting for an order the Milwaukee road at once cancelled the switching charge, but after the North Riverside manufacturers had bought out the complainant it was restored in the hope that it would escape the notice of the commission or that the commission would not insist on obedience to the law so long as the complainant had been brought out.

Chairman Eaton notified Commerce Counsel William Ellis of the Milwaukee road that unless the charge is cancelled at once the commission would issue an order to that effect. Mr. Ellis announced that he would see that the charge was cancelled and that hereafter business would be handled on a distance tariff basis.

Now comes indications that the North Riverside brick men and the Sioux City Commercial club will begin injunction proceedings against the railroad to prevent a cancellation of the switching charge. The road's defense to such a suit would be that the Iowa distance tariff law compelled it to cancel the switching charge and handle this business between the plants and Sioux City on a distance tariff basis. This would bring the question of whether the distance tariff law is binding squarely before the court.

Chairman Eaton and other members of the commission have hoped that the controversy would be settled by the passage of a bill permitting the commission to decide whether or not a manufacturing plant is in the zone within which a switching charge is permissible. The passage of such a bill would aid scores of Iowa brickmakers and other manufacturers who are now held to be outside of the yard limits of Iowa cities and consequently are compelled to pay a distance tariff to get their products from the plant to the transfer yards in the near-by city.

Because they are convinced that the Iowa law will not stand before their attack, Sioux City manufacturers have declined to cause such a bill to be introduced and it now looks as though they intended to fight the Iowa law in the courts.

Under a ruling of the Iowa supreme court a plant is outside of the yard limits and its output cannot be handled on a switching charge basis if engines and cars moving to the plant are handled with train orders. This ruling when applied to many brick yards that are from two to ten miles from the city limits requires the application of a distance tariff instead of a switching charge.

PHOENIX COMPANY TO ENLARGE PLANT

The Phoenix Brick and Construction company of St. Joseph, Mo., will enlarge its brick making capacity and at an early date engage in the manufacture of fire-proofing and sewer pipe. To do this the company has decided on a bond issue by which to raise the sum, $60,000 to $100,000. the bonds to run twenty years and bear 6 percent interest.

The demand for paving brick, fire-proofing and sewer pipe is increasing rapidly in the territory tributary to St. Joseph. With the facilities the company now has for burning with gas, completion with the Kansas gas belt is eliminated and the company already has large orders for the Omaha, Neb., trade.

The company controls what is believed to be an inexhaustible supply of shale, the present bank showing a face of sixty-five feet of solid shale, which extends to a depth of one hundred and eighty feet and experience shows that the deeper one goes into a shale bank the better the quality.

The present intention of the company is to put in a repress, increase its drying capacity, construct a tunnel under King Hill avenue, that it may run a tramway from the shale bank to clay crushers, install a steam shovel, and, as soon as practicable, erect a complete sewer pipe plant. During the burning season with the plant and street work, it gives employment for 200 men and teams. With the enlargement of its plant, it will more than double the number of employes. With the anticipated enlargement of the gas supply, it has the assurance of a complete supply for every day in the year at the same rate as summer rate, which will enable it to work the year around, the winter months being devoted more to manufacturing of pipe than brick.

The Phoenix Brick company has never attempted to enter into the building brick trade in St. Joseph, having all it could do to supply the demand for paving brick, and the cost of manufacturing shale brick being greater than the ordinary mud brick. Architects and engineers now demand a better quality of brick for building and sewer purposes, and the demand is solely for shale brick, though a number of buildings in this city have been faced with the company's brick.

In the past, it is said, some mistakes have been made in the selection and laying of paving brick, especially on heavy traffic streets, but the experience has been valuable and it is claimed that an ordinary street can be paved with shale brick, by modern methods, that will last fifty or seventy-five years.

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BRICK PLANT SUPER. OPENS MACHINE SHOP

J. W. Boltz, who for the past 18 years, has been superintendent of the Capital City Vitrified Brick and Paving Co.'s plant, has, in company with his sons, opened a machine shop at 511 Jackson street, Topeka, Kansas. The reputation of the Boltz boys as expert machinists is generally recognized in Topeka, and they have spared no expense in making their plant one of the most modern in this section of the country. The firm will be known as J. W. Boltz & Sons.

ELEVEN YARDS FORM CENTRAL CONNECTICUT BRICK COMPANY

Announcement has been made of the formation of the Central Connecticut Brick company with headquarters at 77 Church street, New Britain, Ct. Included in the corporation are eleven brick manufacturing plants in this immediate section of Connecticut representing a combined output of upwards of eighty-five millions of brick annually.

The plants in the corporation are: C. P. Merwin Co., Donnelly Brick Co., Richard Murray, R. O. Clark, Jacobs Brick, New Britain Brick, J. C. Lincoln, J. W. Holmes, Standard Brick, Park Brick and Joseph Towers.

The officers of the new corporation are:

President and Treasurer—Joseph Towers.

Vice-President—George Todd.

Secretary and Manager—Horace D. Payne.

Executive Committee—Joseph Towers, R. O. Clark, George H. Todd, W. C. Whitney and R. C Merwin.

This is the strongest combination of brick interests that has been gotten together since the community of selling and producing was first attempted in this section. It is the successor to the Central New England of a few years ago and the Federal Brick company of more recent times. The American Brick company has remained without the fold and it is expected that Carbo of Kensington and Dennis of Clayton will yet join the combination. Most of the yards will begin their output about the middle of next month, although one or two have already started.

Virgil M. Palmer, who has been associated with all local brick combinations in an executive capacity in recent years, continues with the Federal Brick company of Providence. Mr. Palmer is held in esteem by all the local brick men.

President and Treasurer Towers is one of the best known brick manufacturers in the state. He has been instrumental in the formation of the new company. Manager Payne has been connected with the brick industry for a number of years, having started with the C. P. Merwin company. Recently he has been associated in the direction of a plant at Newington.

THREE KENTUCKY BRICK COMPANIES CONSOLIDATE

Negotiations are now on for consolidation of the Lexington, Ky., and Fayette Brick Companies under the name of the Lexington Brick Company and the buying of machinery of the Monticello Brick Company for use in Lexington, in the yards now used by the Fayette Brick Company. The new company will be owned by the present proprietors of the Lexington Brick Company.

The Monticello Brick Company and the Fayette Brick Company, are owned principally by Judge Charles McConnaghy and it is said that his recent financial troubles have caused the present negotiations. Messrs. Fred A. Cramer, and H. C. Cramer, President and Superintendent of the Lexington Brick Company, recently made a trip to Monticello to inspect the property of the company and since then the negotiations for the two yards have been under way.

The acquisition of the machinery used at Monticello and its installation in the yards now used by the Fayette Brick Company will more than double the capacity of the Lexington Brick Company giving it an output of 10,000,000 brick a year. The deal involves property valued at about $25,000.

BONDHOLDERS TO CONSIDER THE DISPOSITION OF THE OAKS PLANT

Bondholders to the number of over 100, of the United States Brick Company, met in the Board of Trade rooms, at Reading, Pa., to determine what action, if any, they will take concerning the sale of the Oaks plant, at Oaks Station, Montgomery county, which the United States District Court has directed to be sold, on Thursday, March 18, to satisfy the claims of creditors.

William Billman was chosen Chairman and William Kalbach Secretary.

Howard L. Boas made a statement on behalf of the committee, consisting of himself, A. J. Brumbach, J. G. Mohn, W. W. Light, J. R. Fricker and W. C. Billman.

He said: "Every effort possible has been put forth in order to protest the Oaks plant for the bondholders whose money actually built the plant. We acted in good faith and thought we were right but the Court of last resort has said that it shall be sold on Thursday unless the bondholders try to prevent it.

"I have made a canvass of the bondholders in order to see what can be done to protect the bondholders."

The total amount of claims filed against the Montello Company is over $224,000. Mr. Boas thought that over $178,000 in claims can be set aside, leaving merchandise claims of over $44,000 to be satisfied. With what is owing the Fourth Street National Bank, $60,000 would be required to pay claims insisted upon, and thereby prevent the sale and get time for a chance to make settlement.

In order to raise the $60,000, Mr. Boas suggested that each subscribe an amount equivalent to 5 per cent. of the holdings of bonds. The latter amount to $1,500,000.

Mr. Boas said the plant was worth $179,000, exclusive of buildings. It could be bought to operate again. It would be bought clear of incumbrance. To operate would require more money. It also could be sold.

If the money is subscribed, it will have to be paid within 10 days. If the merchandise creditors, Mr. Boas stated, could see that the sum could be raised, they would have the referee postpone the sale, until the money is in hand. If this cannot be done, the sale will take place.

Later:—The sale of the property was postponed until April 6th, to give the bondholders a chance to do something.

A LARGE MINNESOTA BRICK CONTRACT

P. O. Duclos, one of the Little Falls, Minn., brick manufacturers, has been awarded the contract for furnishing the brick for a new paper mill to be erected by the International Falls Power company. Mr. Duclos has received an order to supply the northern town with 5,000,000 brick which have been sold at $6 per thousand.

The shipping orders on the brick has not been received as yet but the brick will be shipped at once as it is the desire of the International Falls people to commence work at once. A portion of the shipment will be made from the F. X. Goulet yard at Staples.

This contract is the largest ever made by local brick maker and the size of the order speaks well for Mr. Duclos and the product of his yard.

A NEW SAND-LIME BRICK PLANT FOR WISCONSIN

The International Sand-Lime Brick & Machinery Company, 90 West St., N. Y., have obtained the contract from the Columbia Silica Company of Portage, Wisconsin, for a factory to be operated in connection with their Sand Works. This factory will be practically a duplicate of the celebrated Washington, D. C., factory, which was erected for the Cranford Paving Company, and which will be in every way up-to-date and equipped to make brick under the patented "Division Method."

The buildings will be constructed of steel and entirely fire-proof, temporarily enclosed with galvanized corrugated iron, and later on with brick of their own manufacture. The gentlemen of the Columbia Silica Company, particularly Mr. A. F. Calkins the general manager, investigated the Sand-Lime brick business for a period of four years, and was not willing to invest their money until they had visited the Washington factory as well as the factory of Glen Falls, N. Y., which is operated under the "Division Method." Brick was made for them out of their own material in both of these factories, although they had propositions and investigated the machinery offered them by many other competitors.

The Internationad Company proposes to make a model plant of this factory for the west as much as the Washington factory is a model for the east. We are assured that such a factory will give probable investors more confidence in the business and will be the means of setting to rights a great many wrong impressions now prevailing in the west about the quality of good Sand-Lime Brick.

THE DIVISION METHOD PATENT RIGHTS SOLD IN AUSTRALIA

It is of interest to the public to know that the International Sand-Lime Brick & Machinery Co., of New York, have sold their patent rights for Australia to a Syndicate composed of prominent Melbourne people, headed by an architect and engineer who spent nearly a year in this country investigating the Sand-Lime Brick business which they also investigated in Europe. There are a number of Sand-Lime Brick factories now in Australia equipped by the Germans and operated under the German process. The Germans are not charging anything for patent rights, and their outfits are considerable cheaper in price.

As this Syndicate decided to invest their money in the "Division Method" patent rights after careful investigation of the entire business and ordered the machinery from them, is not only a strong proof of their merit of their patented process, but a feather in their cap for getting the Australia business away from the Germans. This Syndicate will build a string of factories throughout Australia, starting with one at Melbourne, for which the International Company have made the plans, and are getting ready to forward the machinery and will send one of their experienced engineers to supervise the construction of the factory, and set the machinery in operation.

SAND OR LIME BRICK OR BLOCK NEWS

Grand Mound, Iowa, is to have a cement drain tile factory.

George Hill & Son have started their cement brick plant at Eaton, Colo.

J. F. Harbridge has added a cement brick machine to his factory at Milton, Iowa.

The Gary (Ind.) Granite-Brick Co., will erect a $75,000 plant to make both sand-lime and crushed granite-brick.

The Illinois Valley Sand Co., Ottawa, Ills., has installed machinery by which the sand is dried and pulverized.

Paul Fuchs, 611 Carman Ave., Chicago, has sold the rights for the Fuchs enamel to the Keystone Cement Block Co., of Allentown, Pa.

The Progress Brick Co., Schenectady, N. Y., has let the contract to erect a new sand lime brick plant at Setauket. The buildings are to be of steel and brick.

The New Windsor Sand Plaster Co., Newburgh, N. Y., will double the capacity of its plant by running a night force. This was formerly the Sand Lime Brick Co. plant.

The Excelsior Granite Brick Co.'s plant at Michigan City, Ind., has been started. The plant was designed by Paul Fuchs, its general manager. C. Schmidt is in charge.

The Saginaw (Mich.) Sandstone Brick Co., has kept its plant in operation through the last year notwithstanding the business depression. Prospects are good for the future.

The Wisconsin Composite Brick Co., Milwaukee, Wis., which has been organized with $500,000 capital stock is now building their plant. Alderman Henry Smith is the president of the company.

If you are interested in sand-lime brick do not neglect to write to the advertisers in the Clay Record that manufacture this line of machinery. In looking over its pages you will find that there are several.

The Menominee (Mich.) Sand Lime Brick Co., will start operations the first of April and continue until the snow flies next fall. The company has always done a good business under the management of Alfred Henes.

The Greenville (Miss.) Cement Tile Co., has been incorporated with $30,000 capital stock, and will operate the plant of the former Southern Cement Tile Co. LeRoy Percey is president, H. C. Homrighous is general manager, J. H. Crouch secretary and treasurer.

GETS INTEREST IN BRICK YARD IN NOVEL WAY

Judge Taylor, St. Cloud, Minn., has filed an order in favor of the plaintiff in the case of Alex Hohm against John P. Blichfeld, a Minneapolis, Minn., real estate man. This action was brought to recover possession of a half interest in a brick yard plant at Paynesville.

Hohm claims that he hired Blichfeld as an agent to sell a flat in Minneapolis valued at $2,500. The real estate man secured a proposition from the brickyard people in which they offered to trade their plant if Hohm would give back a mortgage for $1,500. The real estate man told Hohm of the proposition but said that the flat would not be enough to close the deal. He offered to throw in some Lake Minnetonka real estate for a half interest. This was agreed upon. Later Hohm learned that Blichfeld did not throw in the real estate and that he had secured a half interest in the plant for nothing. He brought an action in the district court to recover possession and was given a favorable decision.

POTTERY NEWS ITEMS

The reorganization of the Shenango Pottery Co., at New Castle, Pa., will be completed soon.

It is stated on good authority that the United States Porcelain Co., Findlay, O., is seeking another location.

The Columbiana (O.) Pottery Co., has been organized with $60,000 capital. George Peatty is the president.

The Roodhouse (Ills.) Novelty Pottery Co., will issue $15,000 in bonds so as to make improvements to the plant.

The Delft Sectile and Importing Co., New York, has been incorporated by Irvin T. Warren, 206 W. 106th street, and others.

The French China Company will begin the erection of a seven-kiln pottery at Sebring, Ohio, as soon as the weather will permit. It will employ 400 hands.

Oliver H. Sebring of the Sebring (O.) Pottery Co., has invented a device which lessens the cost of decorating ware over 50 percent; also does better work.

With the opening of No. 1 plant of the Homer Laughlin China Co.'s pottery there will be only one plant in the whole East Liverpool, Ohio, district that is idle.

The Kensington Pottery Co., Wilmington, Del., has been incorporated with $100,000 capital stock, by Joseph W. Hitchins and E. L. Squires of Wilmington.

The Economy Pottery Co., Dentsville, N. J., has been incorporated with $25,000 capital stock, by James W. Boswell, Thomas N. Deets, and Wm. Gleaves Jr., of Trenton.

William S. George, President of the Canonsburg (Pa.) Pottery Co., also of the East Palestine Pottery Co., suffered a severe stroke of paralysis at his home in East Palestine, O.

The Harley Pottery Co., Nashville, Tenn., has branched out into other lines and has enlarged the plant and have added bowls, pitchers, cabinette sets, etc. Jugs have been the leader for many years.

The Riverside Potteries Co., Wheeling, W. Va., is the successors to the Wheeling Potteries Co. They own the four works and are capitalized at $500,000. J. E. Wright is president and manager and A. A. Wheat treasurer and secretary.

A new art pottery is to be built at Fredericksburg, O., a small town near Barberton and Akron. Special products will be manufactured from a new clay found there on the farm of R. W. Spencer. W. W. Search of Barberton will finance the company.

The plant owned and operated by the East Palestine (O.) Pottery Co., at Canonsburg, Pa., has been taken over by the Canonsburg Pottery Co., a new organization with $150,000 capital stock. The officers are, W. S. George, President; John George, Vice President; James Shaw, Secretary; and John C. Morgan, Treasurer.

SUIT OVER CEMENT TILE PATENTS

Suit for alleged infringement of patent was instituted in the federal court of Minn., by the Cement Tile Machinery company of Waterloo, Ia., against the Miracle Pressed Stone Company, of Minneapolis, Minn.

The Iowa company charges that patent rights in cement machinery, said to belong to them, have been taken without permission by the Minneapolis company and asks $5,000 damages.

MISCELLANEOUS ITEMS

The Phoenix Brick & Construction Co., St. Joseph, Mo., will issue $60,000 to $100,000 bonds and build a fire proofing and sewer-pipe plant.

It is reported that the Hancock Brick & Tile Co., at Findlay, Ohio, will be obliged to run night and day so as to keep up with the orders.

Another clay manufacturing plant is scheduled for Streator, Ills. Same is to be built by a company now having three plants in operation.

P. O. Duclos of Little Falls, Minn., has received an order for 5,000,000 brick for a paper mill company. This is the largest order ever received by a local company.

The Elk City (Kansas) Brick Co., is making some repairs at their plant expecting to commence operations as soon as everything is put into order. L. M. Frawley is the manager.

The kilns at the plant of the Jewettsville (N. Y.) Pressed & Paving Brick Co., are of the Wilson Kiln & Dryer Co., pattern, and are very successfully burning 40,000 brick daily.

W. O. Gourley, who recently purchased the Paxton (Ills.) Brick & Tile Works, has moved his family to town, and will put the factory in operation as soon as the weather will permit.

The Commercial Club of Newton, Kansas, is working for a 60,000 daily capacity paving brick factory. Clays are now being tested for the purpose. Those interested are home people with one exception.

Perfection, consists not in doing extraordinary things, but in doing ordinary things extraordinary well, is the motto of the United States Engineering Co., of St. Louis, Mo. From what we hear they are living up to it.

F. E. Dickinson, president of the Southwestern Brick Co., at Cherryvale, Kansas, is testing shale from Wellington and if samples are satisfactory a plant will be built there. The Commercial Club have the matter in charge.

Have you looked at the cut on page 14 of this issue showing the "New Departure" tile mill? It makes tile from 3 to 24 inches in diameter. The Anderson Foundry & Machine Works are the manufacturers of this machine.

The men returned to work at same pay at the M. D. Valentine & Bro. Co., plant at Woodbridge, N. J , after a strike of two weeks. The employes are all back at all the clay banks and factories in Woodbridge and vicinity.

The Scranton (Pa.) Vitrified Brick Co., at Nay Aug, which burned down some time ago, will be replaced with new buildings. The main building will be 80x77 feet, two stories high, fireproof and other buildings to correspond.

At the annual meeting of the Nelson Vitrified Brick Co., Mound Valley, Kans., the name was changed to the Parsons Vitrified Brick Co., and office changed to Parsons. The plant will be remodeled and new kilns and drying sheds erected.

The complete plant of the W. J. Rainey Coke Co., at Uniontown, Pa., was built by the Wilson Kiln & Dryer Co., of Philadelphia. The capacity is 40,000 fine brick daily. The Wilson kilns and dryers were used and are meeting great success.

The Camp Hill (Ala.) Brick Company has resumed after several months of idleness.

Harry E. McLane Co., Pittsburgh, Pa., will put up a brick factory at Madison, Ohio.

The S. S. Kimbell Brick Co., Chicago, Ills., has increased is capital stock from $10,000 to $75,000.

The Cobb Brick Co., Ft. Worth, Texas, has been incorporated with $30,000 capital stock by H. H. Cobb, F. C. Cobb and J. C. Harris.

The St. Francisville (La.) Brick Works, after being closed down for several months, resumed operations the middle of this month.

The Hydraulic Press Brick Co., has appointed V. A. H. Robinson state agent of the company. They have plants at Porter and at Brazil, Ind.

The Streator (Ills.) Clay Manufacturers' plant will be rebuilt as soon as the weather will permit, so that the plant will be in full operation in August.

The Ladd Brick Works at Ft. Payne, Ala., is to be started up soon on an enlarged scale. F. E. Ladd is the manager. They want a dry press and dry pan.

The Harris Brick Co.'s plant at Zanesville, Ohio, which has been idle for some time, is to pass into the hands of Akron parties and be operated at once.

The work of putting the New Straitsville, O., brick works in order is progressing rapidly. As soon as repairs are completed 100 men will be given employment.

The Bauman Brick Co., Beach, N. Dak., has been formed by H. A. & F. T. Bauman. The plant is one and one half miles southeast of town, and will make soft mud brick.

The Morton (Minn.) Brick & Tile Co., has been incorporated with $50,000 capital stock by H. A. Sodergren, H. A. Hanson, J. A. Nelson and William F. Nelson of Minneapolis.

The Banner Clay Works, Edwardsville, Ills., have started up for the year. Mr. F. Luth, the Supt., says there is a large number of contracts ahead. Two steam shovels will be operated.

The William E. Dee Tile Works at Newport, Ind., have been rebuilt and will soon be ready for business. The new structure is larger and better arranged than the one that burned. It is equipped with modern machinery and its own electric light-plant.

The Lamartine Peat, Light & Power Co., Fond du Lac, Wis., which has been taking peat from the marsh at Lamartine, intends to engage in the manufacture of brick, etc. The clay will be taken from the part of the march from which the peat has been removed.

The Webster City (Ia.) Brick & Tile Co., has elected the following officers: G. A. Soule is President; J. F. Carey, Vice President; C. W. Soule, Treasurer and Manager; and M. S. Carey, Secretary. New machinery is to be installed and the capacity of the plant greatly increased.

The Johnson City (Tenn.) Brick Co., has been incorporated with $10,000 capital stock. Incorporators are R. Buffalow, W. C. Buffalow, Jno. E. Karnes, Charles Karnes, and W. B. McGill. E. F. Bowman of Paris, Texas, is now installing the plant. W. B. McGill will be manager.

A new plant is to be built at Montrose, Colo., by Mrs. G. A. Buckley.

T. B. Rayburn, 814 Main St., Little Rock, Ark., wants prices on machinery for the manufacture of tile.

John Birth of Whitesville, Ky., and others are considering the building of a plant to make brick and tile.

The Kellogg (Ia.) Brick & Tile Works has contracted to furnish 1,000,000 brick for the Newton court house.

Robert Dyas & Associates, Nashville, Tenn., contemplate establishment of sewer pipe plant in New Decatur, Ala.

Dr. W. E. Fish of Anita, Iowa, who owns the Aberdeen (So. Dak.) Brick Co., expects to enlarge and double the works.

J. C. Kappler, Giddings, Texas, is stripping off the dirt in his brick yard preparatory to his putting in his new Press Brick plant.

The sale of the Oak's plant of the Montello Brick Works, Reading, Pa., which was set for the 18th of March, has been postponed until April 8th.

After being closed for four months to make extensive repairs, the Gulf States Brick Co., Beaumont, Texas, has resumed operations at full time.

T. E. Irvin has leased the Patoka (Ills.) Brick & Tile factory for a year from the owner, Frank Osborne, who he has employed to superintend the works.

The St. Anne (Ills.) Brick & Tile Co., will shut down to make needed improvements. New kilns, larger dryer and tunnels to large stack are being made. A new steam shovel has been added.

The Contractors Brick & Supply Co., 36th & Elm Sts., Spokane, Wash., has been incorporated with $100,000 capital stock, by R. W. Stitsel and William Stitsel of Spokane and William B. Freeland of Kansas City, Mo. An order has been placed for a 50,000 daily capacity plant to be operated by motor power.

DIRECT HEAT

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BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

The Brown & Yoke brick plant is to be built within the limits of the city of Ft. Smith, Ark.

A. S. King of Terre Haute, Ind., is considering the building of a brick plant at Miller, Nebr. His father, W. J. King, will be interested with him.

A movement is on foot to incorporate the Lone Star Brick Co., at Sequin, Texas. Capital stock $50,000. It will take over and enlarge the Pearson brick yard.

A move is on foot to organize and incorporate the Fayette (Mo.) Pressed Brick Works with $12,000 capital stock and take in the present plant of Mr. Gantner.

The Payne tariff schedule on earth and earthern ware, fire brick and other brick if glazed or enameled, is reduced from 45 percentum to 35 percentum ad valorem.

The Canton (O.) Roofing Tile Co., has been incorporated with $230,000 capital stock. Incorporators, William Rounnel, G. Edel, S. F. Heironimus, W. G. Miller and F. O. Hamilton.

Chalmer Moore of Zanesville, O., and J. D. Fowler of Junction City, have bought the stock of Samuel F. Spencer in the Dresden (O.) Brick & Tile Co. They will enlarge the plant so as to employ 100 hands.

The plant of the Reynoldsville (Pa.) Brick & Tile Co., which has been idle for more than a year, has been put into operation, giving employment to 75 men. Thomas Evans has leased the plant and promises a steady run.

The Kanawha Brick Co., Charleston, W. Va., are getting ready to start up again for a steady run.

The Gay Head (Mass.) Fire Brick Co., has been organized and leased Gay Head clay beds for 10 years at $400 a year.

The Business Men's League of Clarendon, Ark., want a first-class brick and tile factory, and will subscribe capital to same.

The Steelton (Pa.) & Harrisurg Brick Co., is making many improvements to their plant at Franklin and Myers streets, and is rapidly getting the plant ready to operate..

The Casey Brick Co., has bought the engine, boiler and all machinery, except two brick machines, in the Roselle (Ills.) Brick & Tile Works, and is removing them to Casey.

The L. J. Haskins Brick & Tile Works at Sergeant Bluff, Ia., has started manufacturing for the season. The plant was formerly the C. W. Ritz yard. The plant will now run full force.

The Wickliffe (Ky.) Brick & Tile Co., has been incorporated with a $100,000 capital stock. The incorporators are: Capt. T. S. Shaw of Cadiz, R. L. Coffy of Sturgis and Gip Watkins of Tracey.

John H. Flautt, who has been the supt, of the Bessemer (Ala.) Fire Brick Co.'s plant, has resigned and removed to Ensley where he has accepted a position with the Harbison-Walker Refractories Co., who are building a $250,000 plant.

B
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ROOFING
A Cure for Leaky Roofs

DON'T waste time trying to patch a leaky roof! A roof which leaks in one place is generally on the verge of leaking in *many other places*.

The cheapest method of repair is to *cover the whole roof with Amatite*. Amatite costs so little that the entire job can frequently be done for the expense of caring for a leaky roof. After the old roof is covered with Amatite you will have no further worry or expense.

Most ready roofings require a coat of paint *every two years* to keep them in order. But Amatite is not the *ordinary* kind of Ready Roofing. Amatite has a *real mineral surface*, firmly imbeded in the Coal Tar Pitch waterproofing. This surface resists the attacks of the elements like a stone wall. It demands no additional protection or covering, such as a coat of paint.

Buying Amatite is the same as buying an ordinary ready roofing with an agreement from the dealer to keep it painted free of charge. Such an agreement on the ordinary roofing would double its value. You practically get such an agreement with every roll of Amatite; yet the price is no greater than that of the ordinary kind.

Send us your name and address, and we will forward you by return mail a free sample of Amatite, and you can see how tough, durable and substantial it is. Write to-day to nearest office.

BARRETT MANUFACTURING CO., New York, Chicago, Cincinnati, Minneapolis, Cleveland, St. Louis, Pittsburg, New Orleans, Kansas City.

WANTED

A practical man with experience to take charge of good brick and tile plant. Must have $1000 to $15000 to put into the business with us. Good opportunity to the right party.

Uniontown Brick & Tile Co.
Uniontown, Ky.

HELP WAFTED

Wanted a head burner for a paying brick plant in Iowa.

Burner, care Clay Record,
Chicago, Ill.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

Two, Three and Four-Mold Presses. Stiff mud auger machine. Pug mill and cutter. One pulverizer and one mixer. Two small engines. Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

Southern Brick & Tile Co.
Louisville, Ky.

GOOD PLANT FOR SALE

At a reasonable price a well equipped brick plant in town of 4000, county seat; Frisco, Missouri Pacific, and M. K. & T. railroads. Forty-two miles from Kansas City. Good machinery, fine shale and excellent water, capacity 30,000, town just paving streets; will put in several blocks this season. Have contract for new city building to aggregate 200,000 brick. Will sell at reasonable figure, turning all business over to purchaser. This plant is for sale on account of death of Dr. A. Reichard, proprietor. For further information address

WALTER V. REICHARD,
Paola, Kansas

20,000 WOUDEN PALLETS

Will be sold cheap, size 10 in. by 32 in. and 3½ in. leg. Address

JASPER ADAMS,
Battle Creek, Mich.

FOR SALE

Brick Yard for sale, only yard in city of 7000; modern machinery; only bed of clay suited for brick; nearest competitor 30 miles. Good reason for selling. A fine chance for a practical brick manufacturer. Address:

ADAM PAULUS
Marshfield, Wis.

FOR SALE

Vol. 1 of Sager's Collected Works. Book is in splendid condition. Price only $5. Answer at once.

Book, care of Clay Record,
Chicago

FOR SALE
SECOND HAND MACHINERY

Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2⅛ in. to 1½
One McGowan & Co. 6 in. to 6 in.
One Blake 6 in. to 6 in.
One Erie Engine 75 h. p.
One No. 7 Dean 4in. to 6 in.
One Blake 3 in. to 4 in.
Two Cameron 3 in. to 4 in.

Three Centrifugal pumps 4⅛ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in. Buffulo Force Fans. One Stutervant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill One No, 2 and No 3 Mead Mill. Four 32 in. and one 42 in. Munson Mills.

The above machinery has been used only a short time.

S. KRUG WRECKING CO.
Nebraska City, Neb.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

BRICK MACHINERY FOR SALE CHEAP

One—125 H. P. Atlas Engine.
Two—80 H. P. Atlas Boilers.
One—9 foot Raymond Dry Pan.
One—No. 77 Raymond Brick Machine.
One—Raymond Rotary Cutting Table.
One—10-ft Raymond Pug Mill.
One—2 Cylinder Steam Hoist.
104—Steel Frame Dryer Cars with iron pallets.
Two—Transfer Cars, six tons, 12 lb. rails.

Five acres of good brck shale and cheap natural gas. Good reasons for selling.

Address: P. O Box 206
Iola, Kansas

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Bensing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32,000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12,000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address

J. M. CRABILL,
Clarinda, Iowa.

FOR SALE OR LEASE

Good soft mud brick plant in city of 10,000 in Indiana; capacity 25,000. Will be sold at a bargain on easy terms; good reasons for selling. Address

R 5, care Clay Record,
Chicago, Ill.

FOR SALE

A Wellington Brick Machine, two-horse power, soft mud. Also 3000 or 4000 brick pallets. Address

August Chevraux,
Louisville, Ohio

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago, Ill.

WANTED

Second-hand, two or four-mold dry-press brick machine. State condition, where located, and lowest cash price; also name of manufactuerer, when beught, and amount of brick made or how long used. Address

Dry Press:
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Clay and Coal For Sale or Lease

Have 1,500 acres of the celebrated Carter Co. fire clay and coal land to sell very reasonable or lease on royalty. Three veins of fire clay and one three and one-half foot of coal in same hills at Denton, Ky., on line of two railroads.

Fine prospect for oil and gas.

Address: J. H. BURDETTE,
622 West Caster Ave.,
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BOOK WANTED

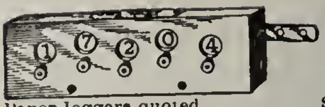
Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

Book, care Clay Record,
Chicago, Ill.

FOR RENT

The Mendota Brick and Tile plant to rent on easy terms. Good home trade and shipping trade over three railroads. Apply at once to

Mrs. Wm. Stare,
Mendota, Ill.



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One four-mold Ross-Keller Brick Press in good working condition Has only been used one year.

Chisholm, Boyd & White Co.,
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One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machihe; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
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Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

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Clay products plant. Established business. Running concern in one of the best cities in Ohio.

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FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

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FERNHOLTZ BRICK MACHINE CO.
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Well equipped brick and tile plant in central Iowa. Everything complete and ready for business. Plant cost $20,000 and will pay good dividend at that figure. What have you to offer? Will conider good land (prefer clear land as plant is unencumbered) in exchange. Give legal description, price and fullest particulars in first letter

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FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

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The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14½x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

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BOILERS Fire Box—80, 60, 50, 40, 35, 30, 25 20, 16, 12, 10 and 8 h. p., etc.

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HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

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Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

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Gas Producer Installation.
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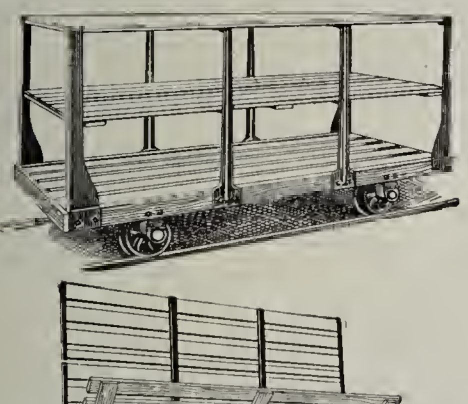
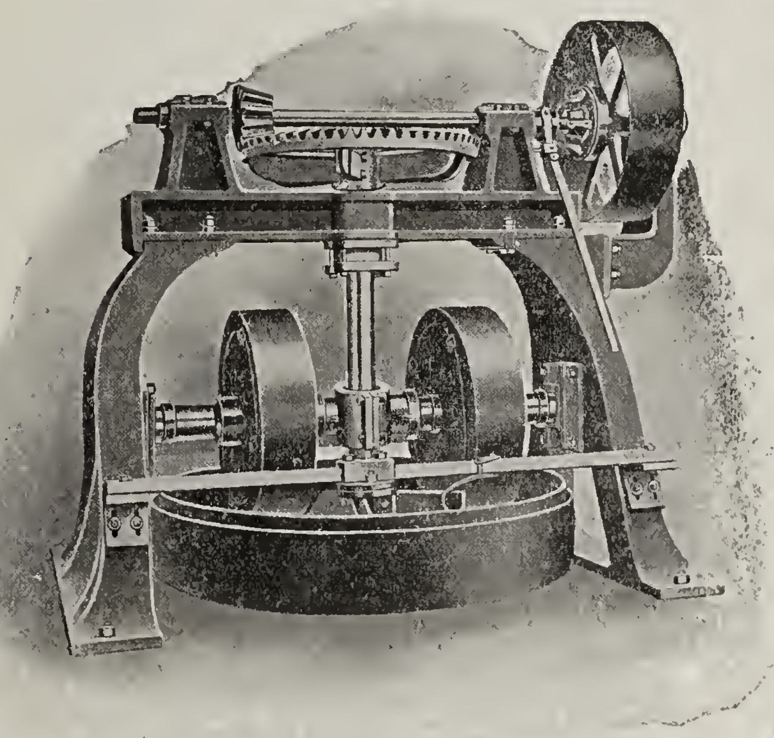
The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA



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When writing for prices state kind of material and capacity required.

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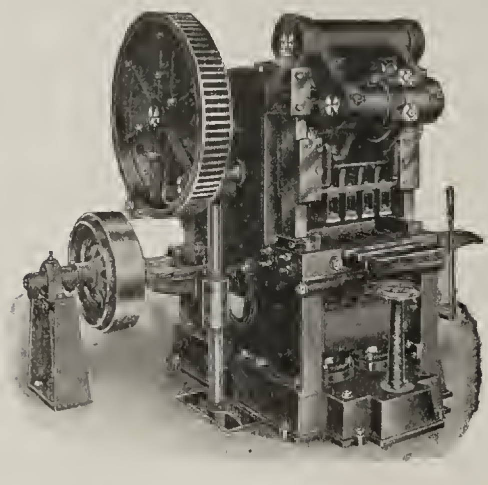
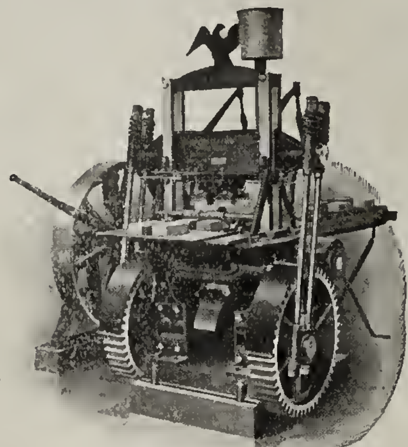
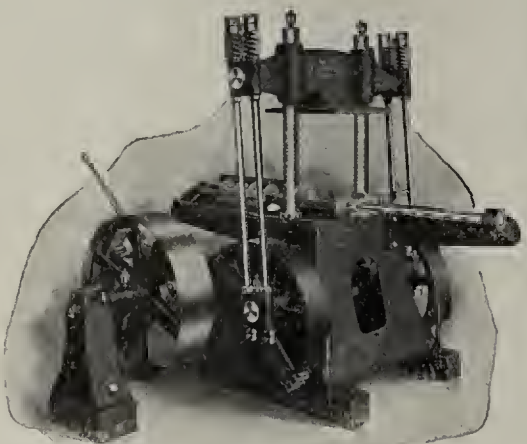


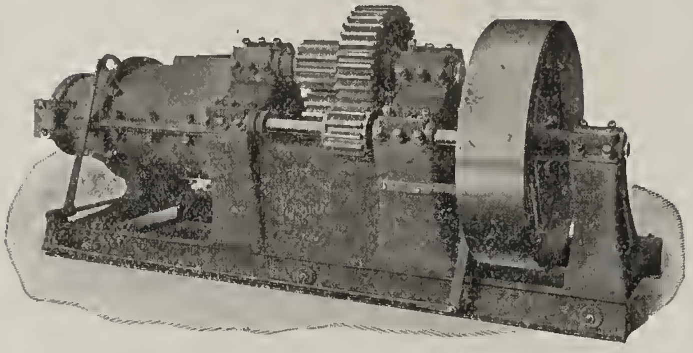
Model "B" Dry Press



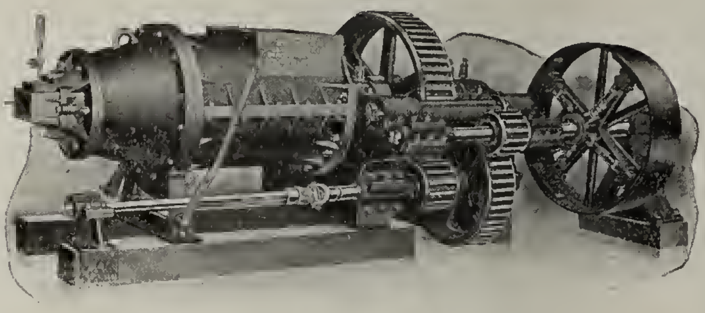
Eagle Repress



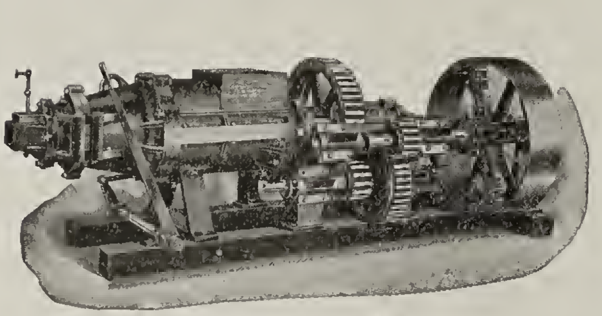
Roofing Tile Press



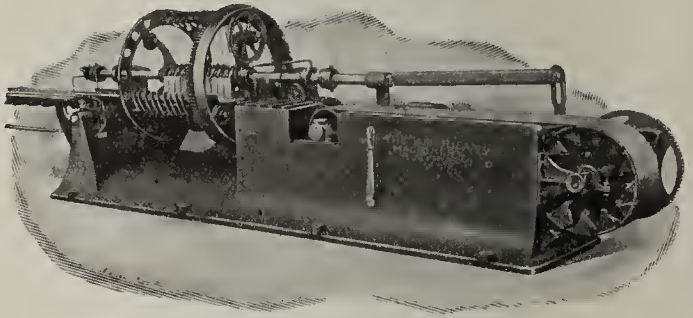
No. 65 Auger Brick Machine



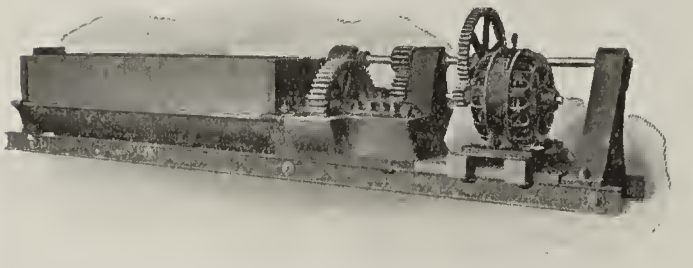
Special Giant Brick Machine



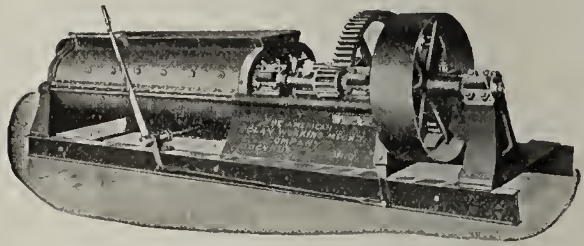
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



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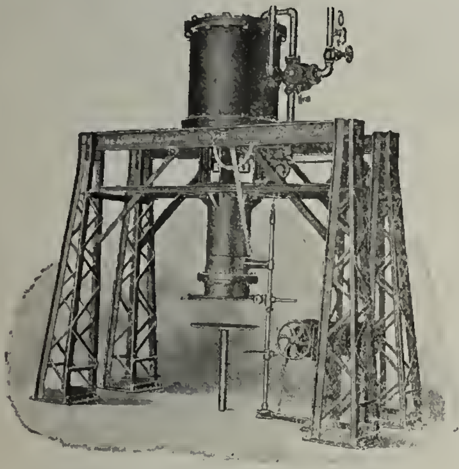
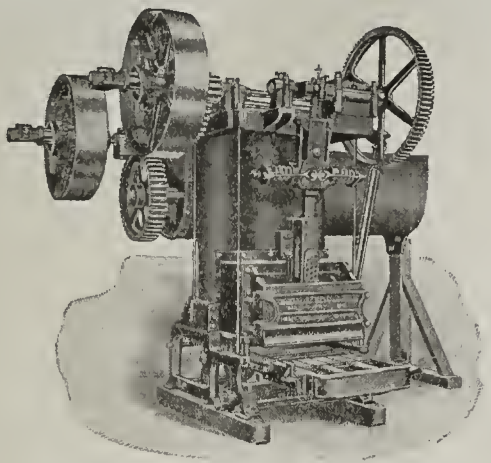
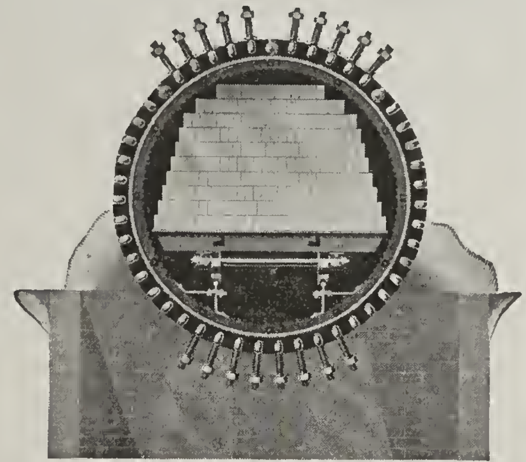
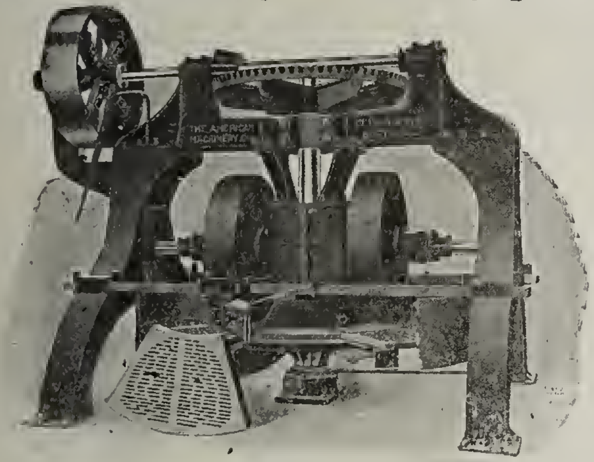
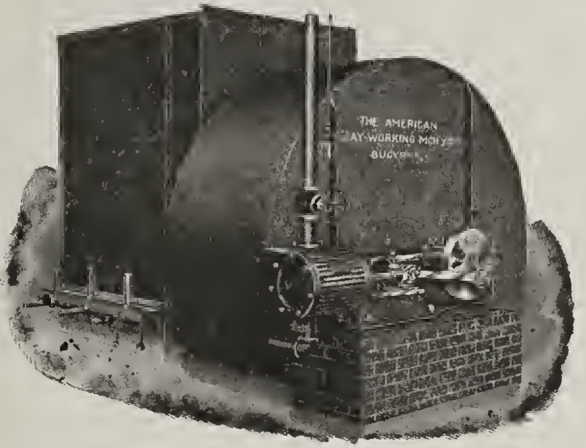
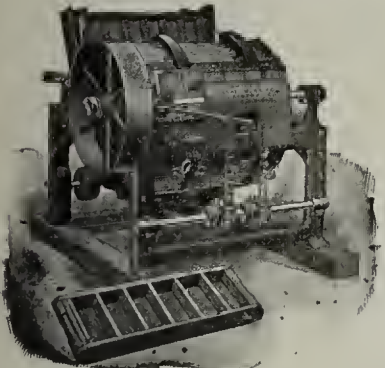

Sewer Pipe Machinery

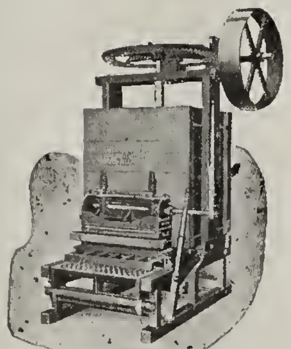

Upright Stock Brick Machine

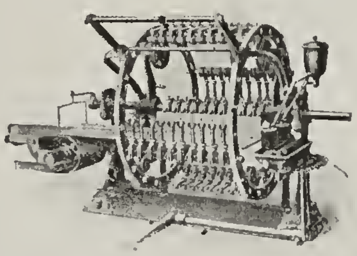

Sand-Lime Brick Machinery

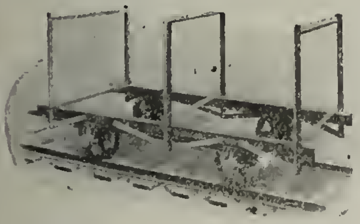

THE AMERICAN CLAY MACHINERY CO.
9 Foot Dry Pan


THE AMERICAN CLAY-WORKING MCH'Y CO. BUCYRUS
Blower Dryer Apparatus

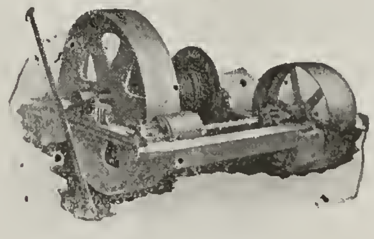

Mold Sander


H. P. Brick Machine


No. 62 Hand Power Cutter


Dry Cars

Disintegrators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Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

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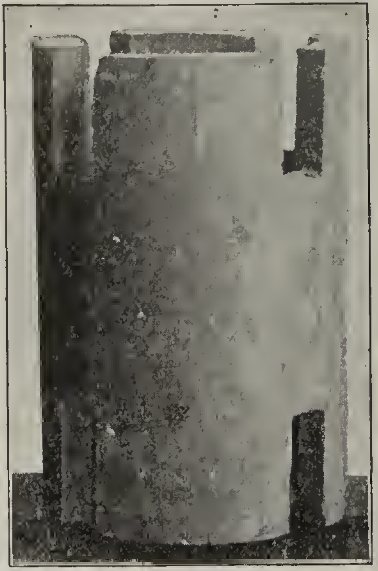

You can get more profit on your clay and labor by making these tile than you can by making drain tile.

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Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understand and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

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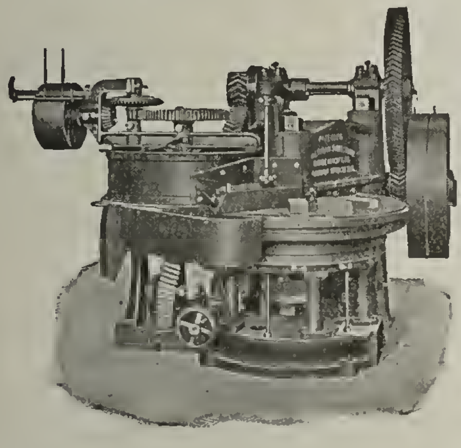
MAKES REAL MONEY

Send for proof; also details about our Hand Presses, Dry Pans, Pulverizers, Mixers, Crushers, Elevators, Screens, Clay Plows, Clay Gatherers, Shafting, Hangers, Pulleys, Belting, Trucks, Barrows, Kiln Irons, Dryer Cars, etc.
SCOTT MANUFACTURING CO., 3rd National Bank Building, ST. LOUIS, MO.

The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

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A Manual for all Engaged in the Manufacture of Articles from Clay

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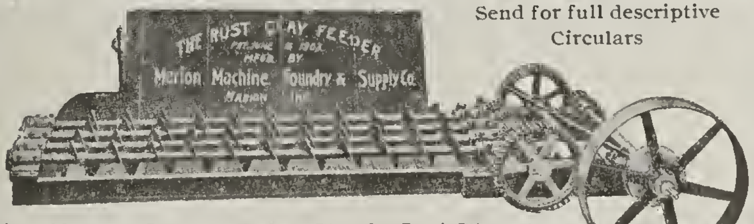

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Saves the labor of from 1 to 2 men in every factory, besides mixing and feeding the clay evenly to the disintegrator

One of the many testimonials we have received from users of these Feeders

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Manufacturers of Porous Drain Tile

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We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,
SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

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HERE IS THE REMEDY.

PRECIPITATED

Carbonate K.B. C.F.H. **of Barytes**

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..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

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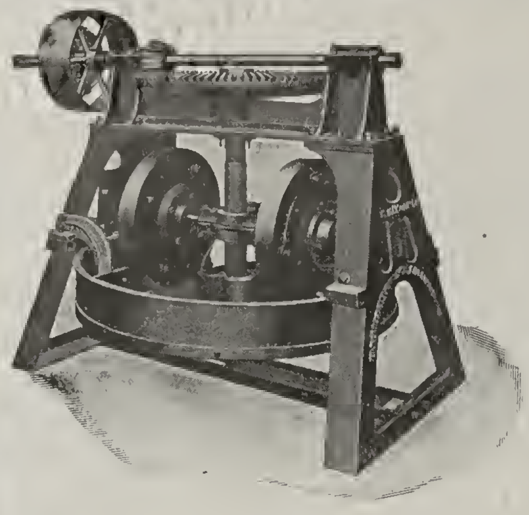
THE HAYDEN DRY PAN.



Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
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Independent or yoked mullers.

Send for specifications and prices before buying.

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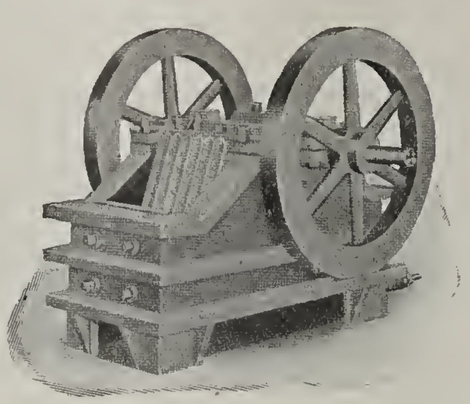

This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

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Best material and workmanship.

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We have been in the business for 30 years and our present types are the result of this experience combined with the very best mechanical principles of the age.

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With Independent
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MULLERS

A well-tried and
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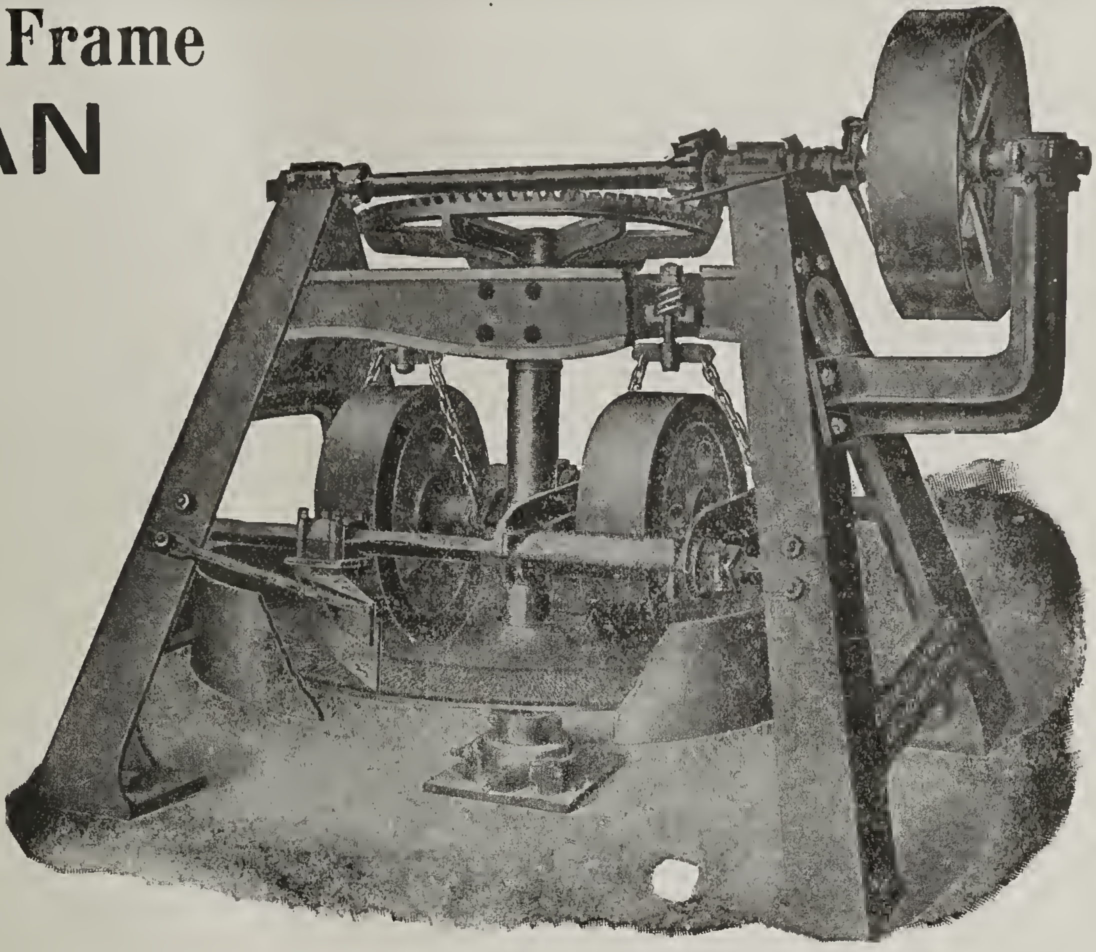

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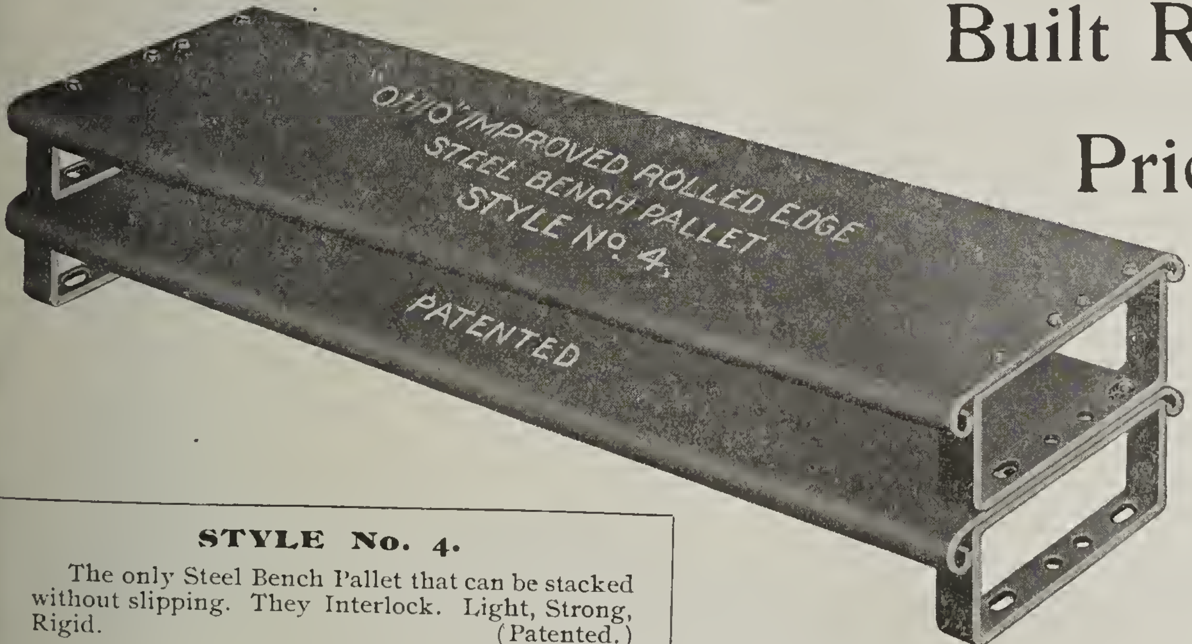

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THE PHILADELPHIA OPERA HOUSE
Shown with Porches Not Quite Completed

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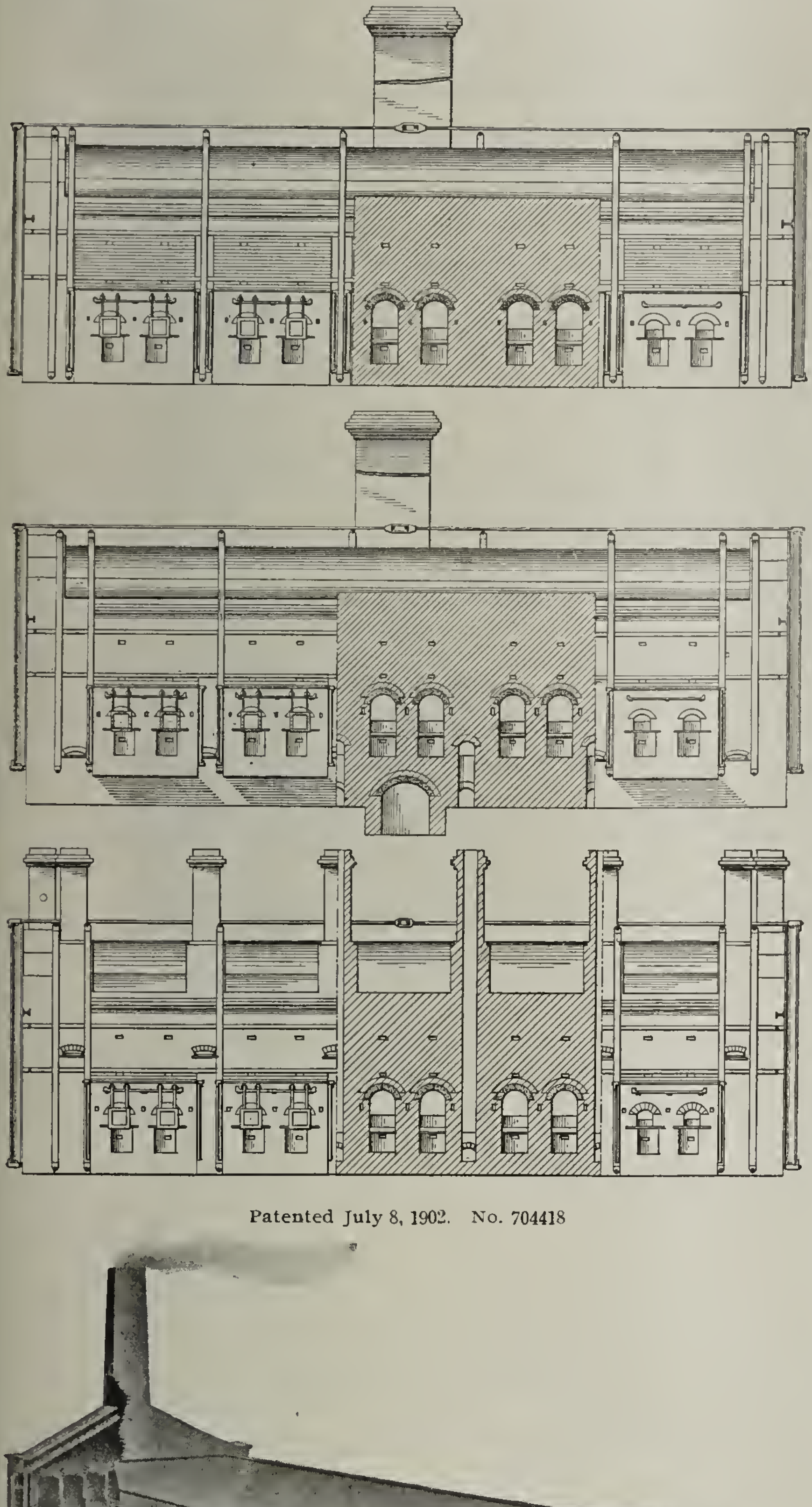
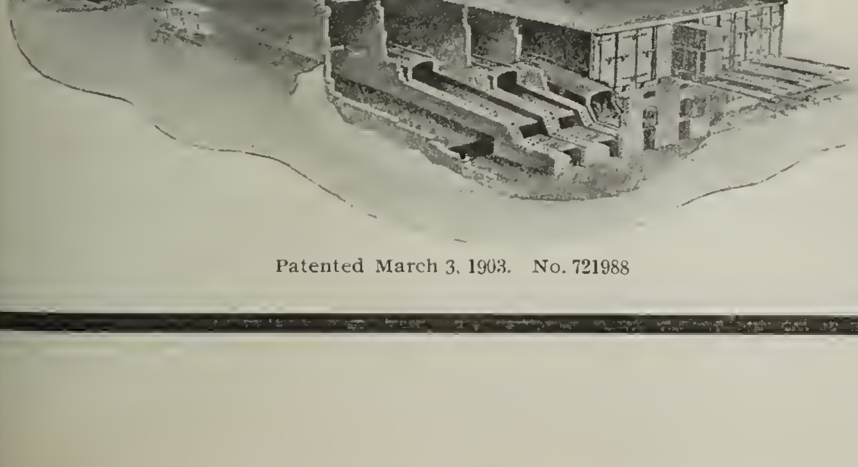
Wilson Kilns and Dryers



Patented July 8, 1902. No. 704418



Patented March 3, 1903. No. 721988

THOMAS M. WILSON

Mr. Wilson is the Inventor and Patentee of the Wilson Kilns and Dryers, including the smoke consuming furnaces which will burn brick without smoke, also the Continuous Waste Heat System, which does away with the smoke nuisance.

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We believe we have the most satisfactory kiln and dryer system to produce results on the market.

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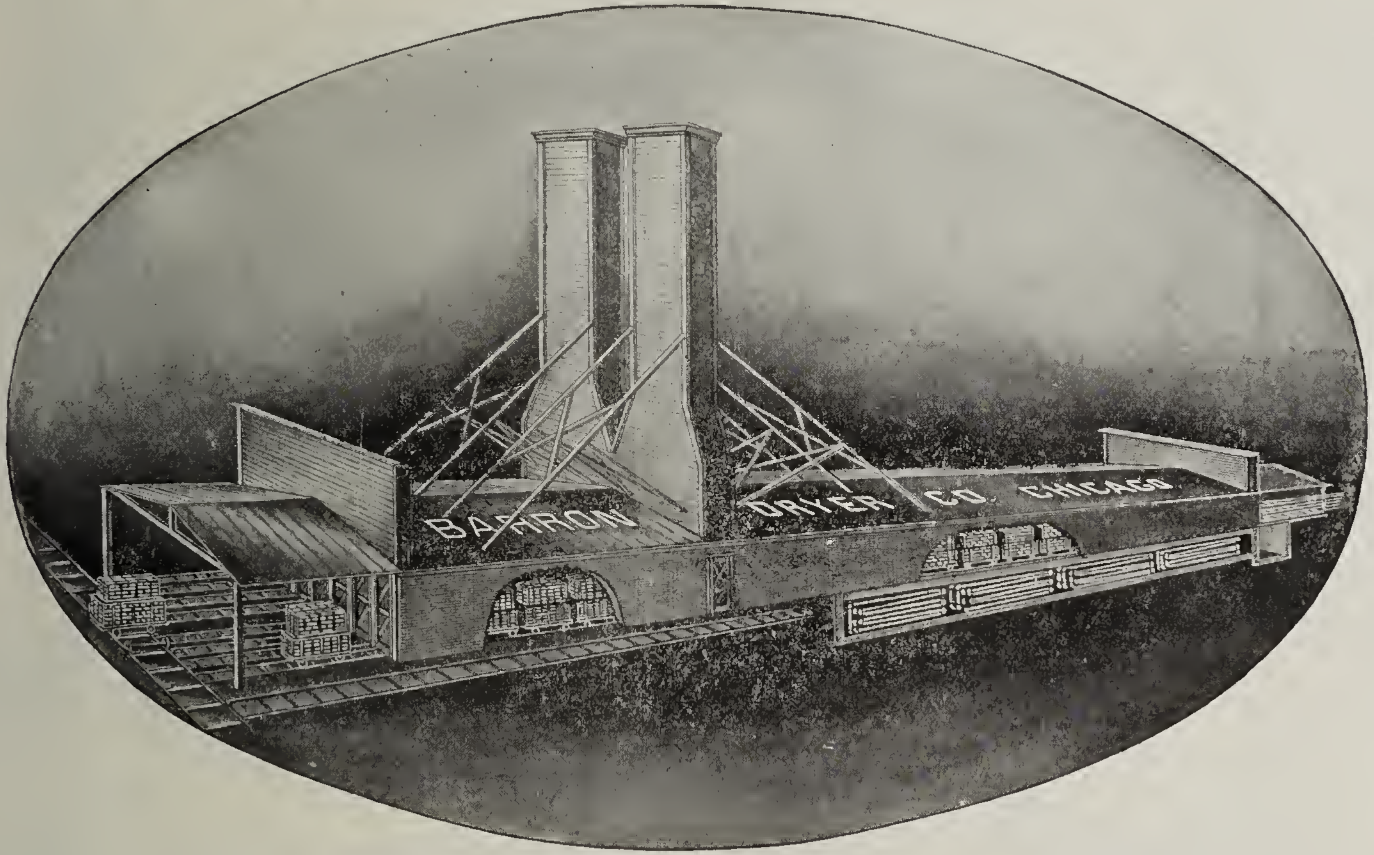
MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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ITS SIMPLICITY, DURABILITY AND

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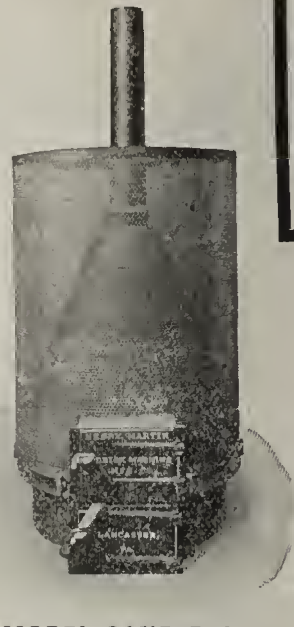

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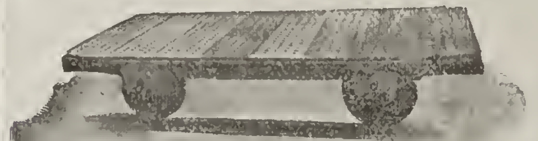
WE GUARANTEE, OUR MACHINERY



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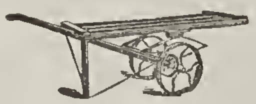
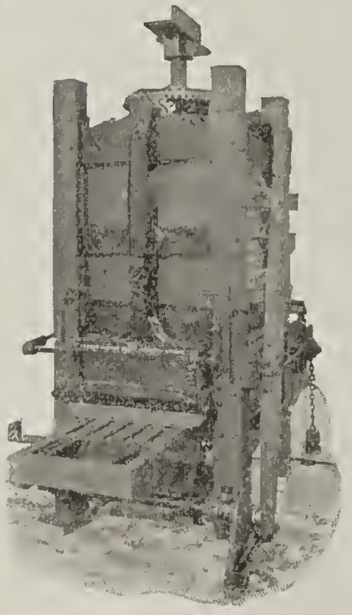
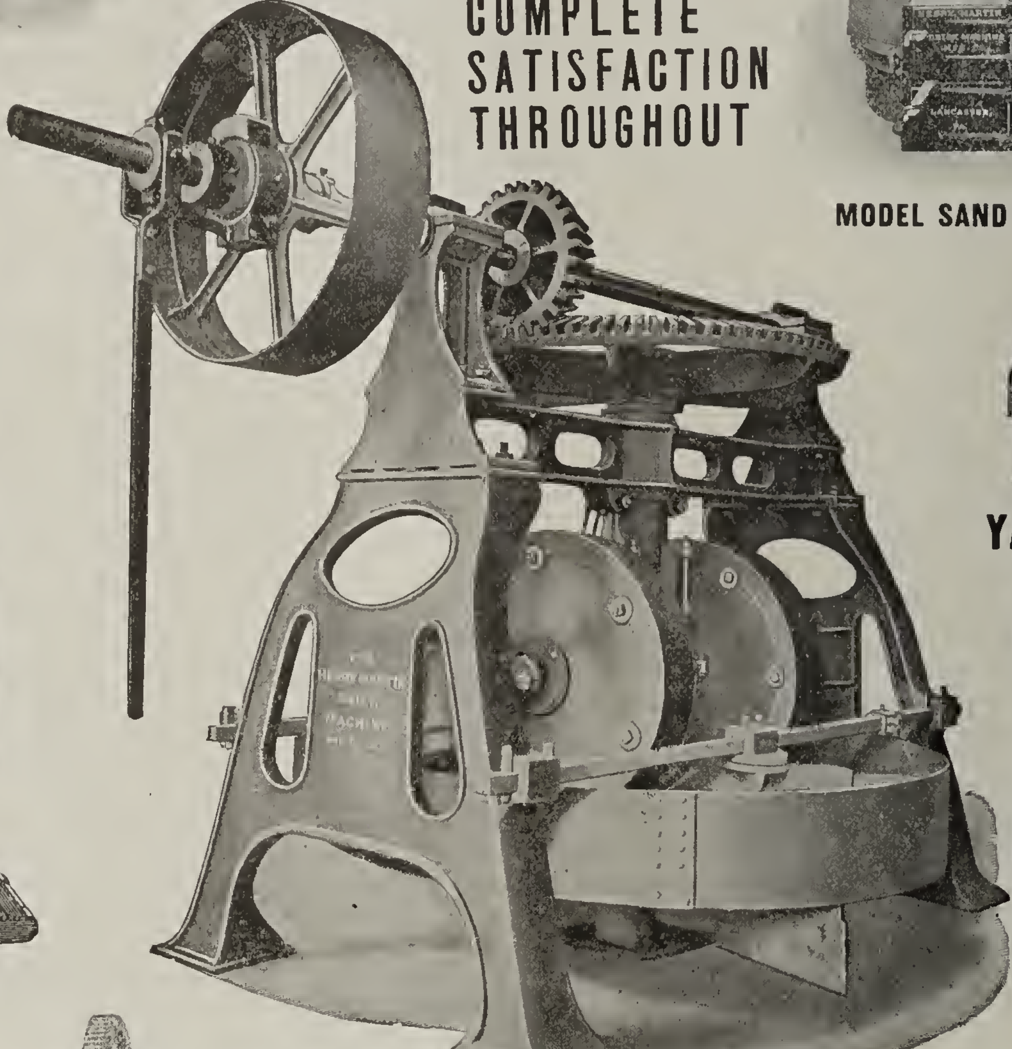
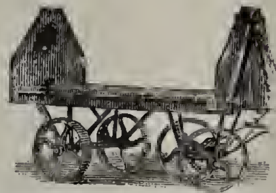


TRUCKS



HORSE POWER MACHINE





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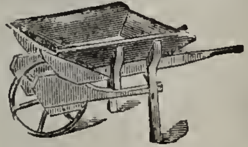

OF ALL KINDS BUILT RIGHT

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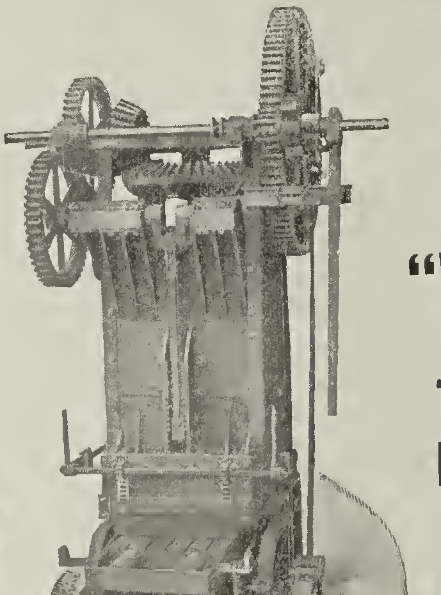
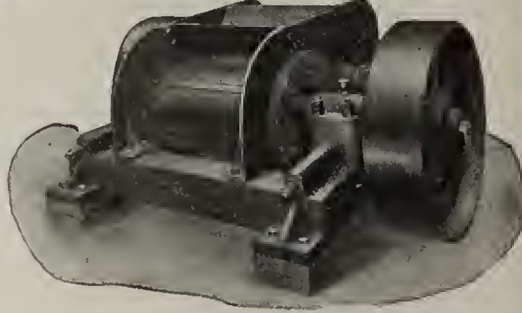
BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



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CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

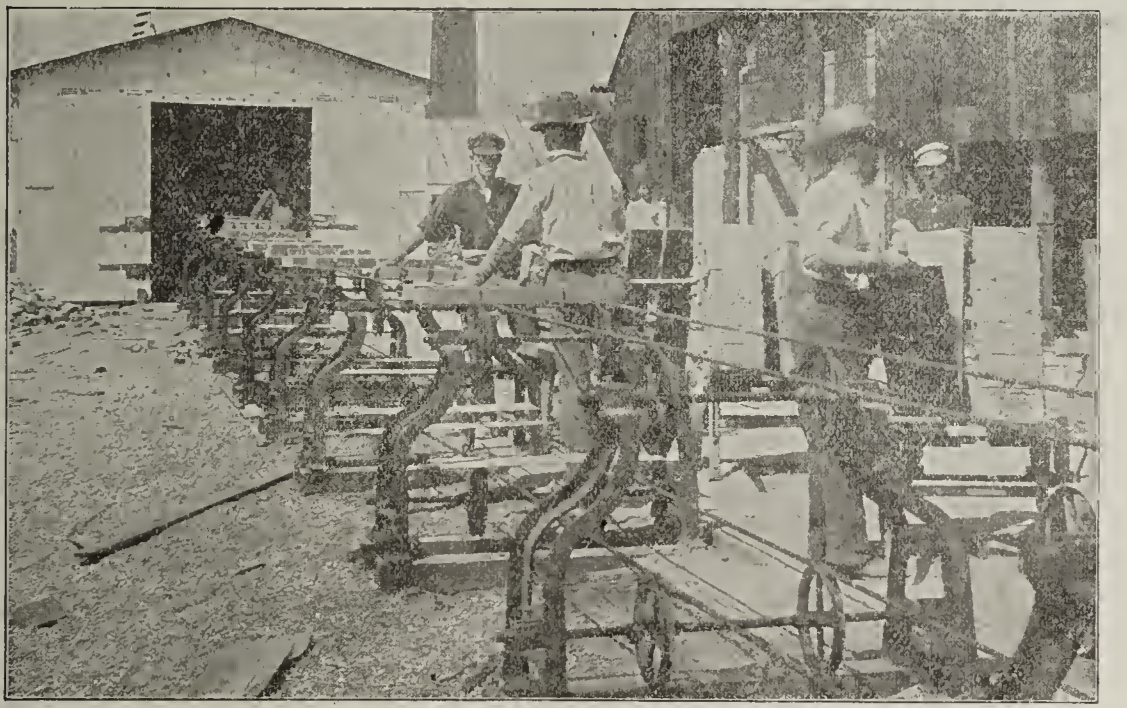
PATENTED

February, 22d, 1898, No. 599509
October 10, 1905, No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞



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ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

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Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

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Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

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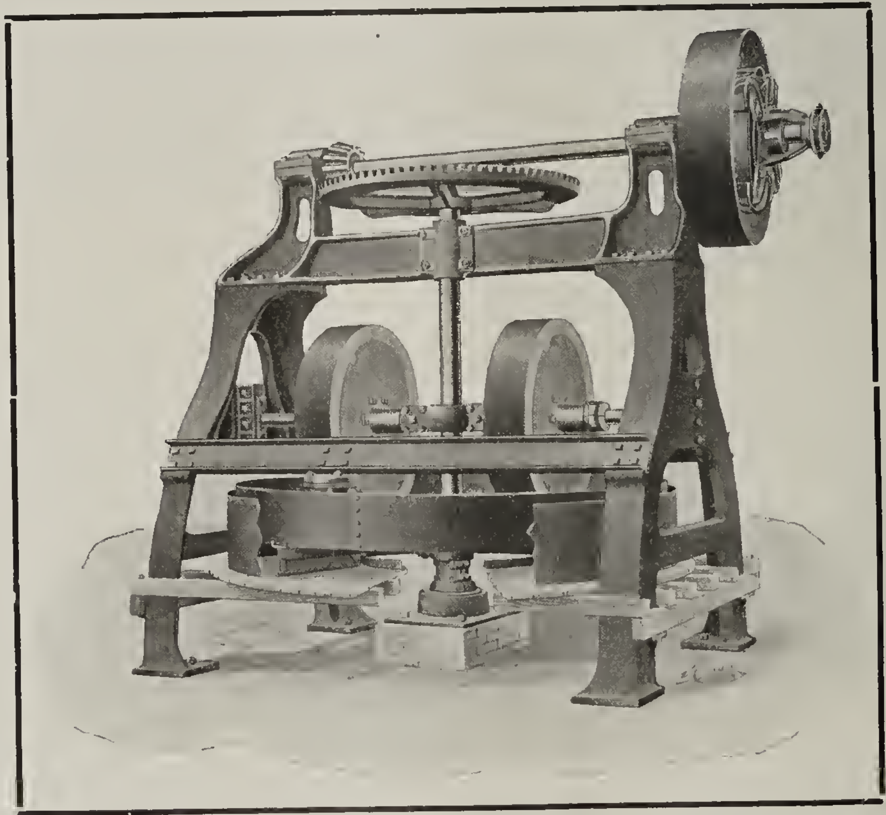

Dry Pans

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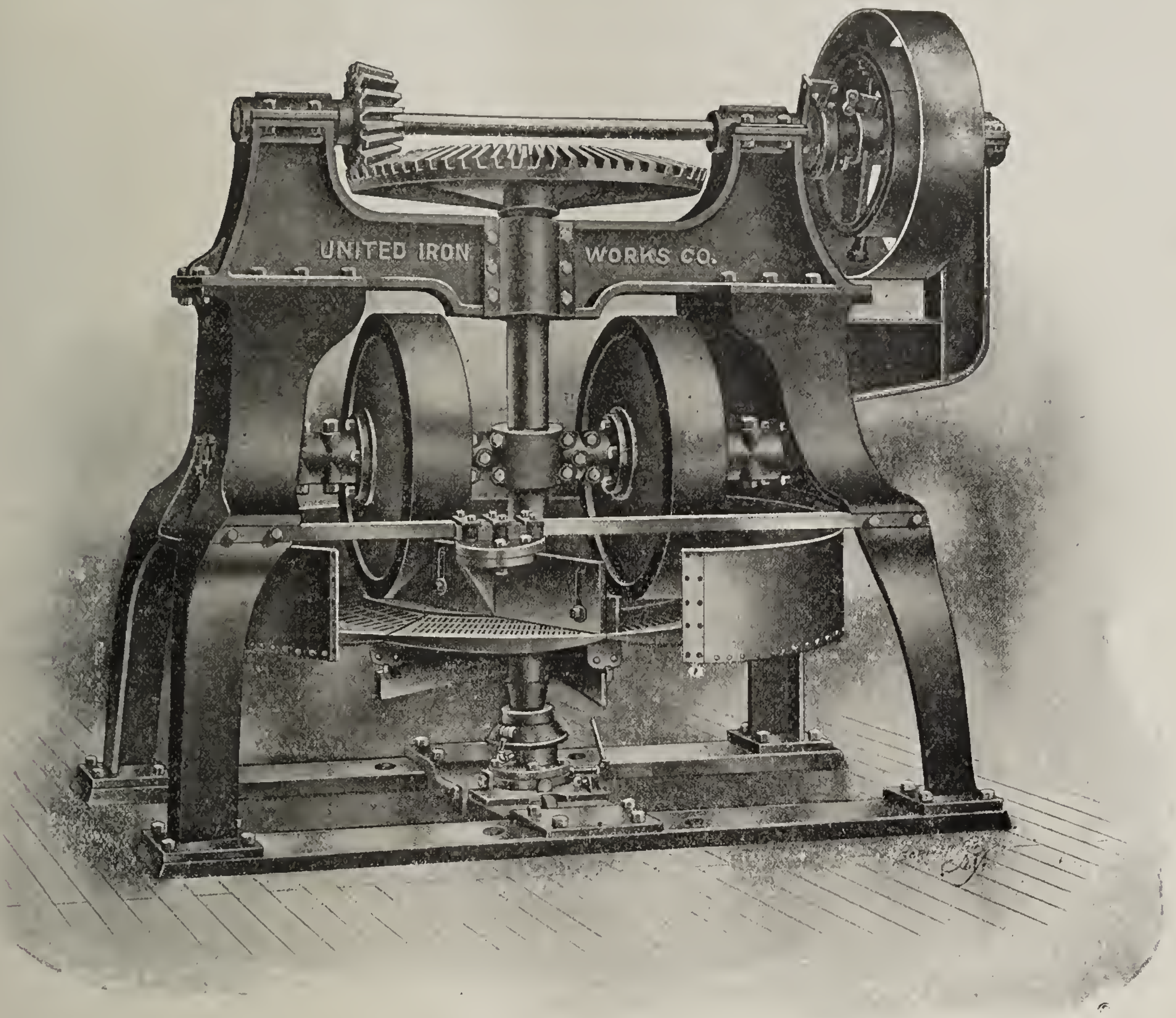
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"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

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Electric Side Dump Car.

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Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

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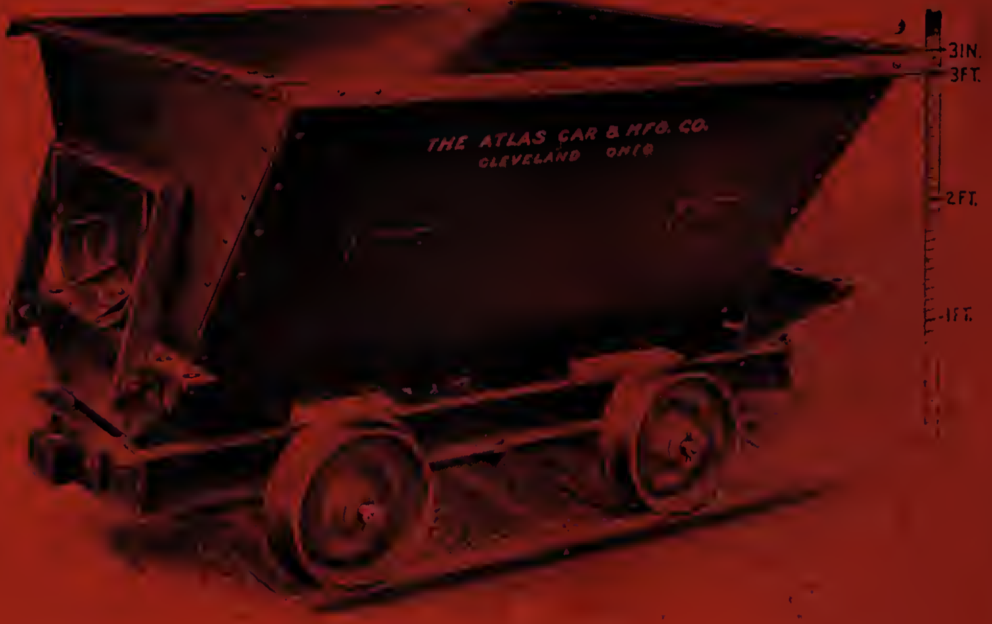

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The Atlas Car and Mfg. Co.

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CLAY RECORD

VOL. 34 NO. 1

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
— TO THE —
CLAY · —
· INDUSTRY ·

April 15, 1909

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As installed at Omaha, Nebraska

We are now ready to furnish licenses for the building of the Youngren Continuous Gas Fired Kiln.

The great labor saver, and the wonderful fuel saver. It will give you a profit while your competitor is selling at cost. He can't stand up against your 60 per cent to the good, besides the uniformity of burn obtained by no other method.

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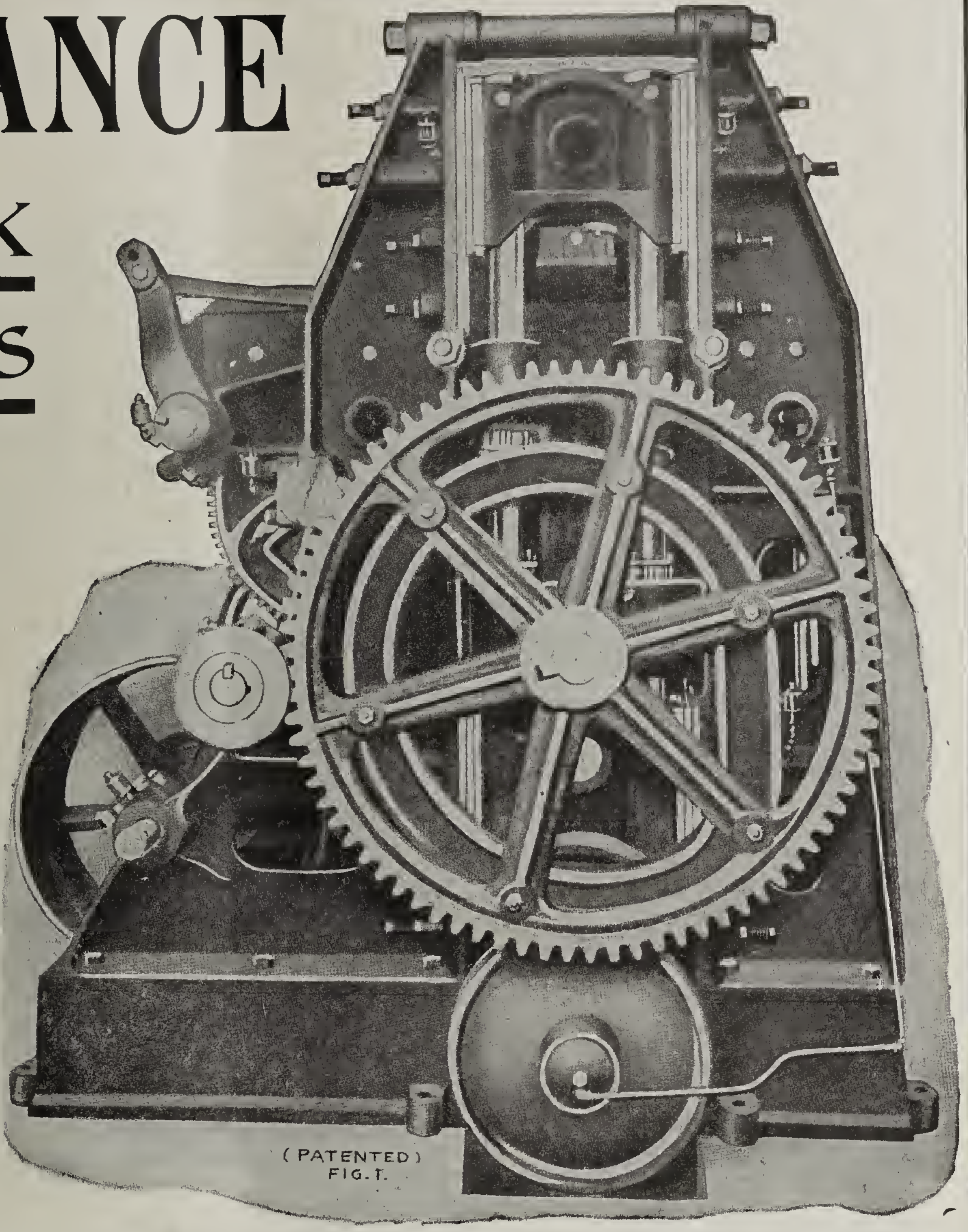
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The Only Machine Making Brick Without Granulated Centers

No Toggles
Powerful
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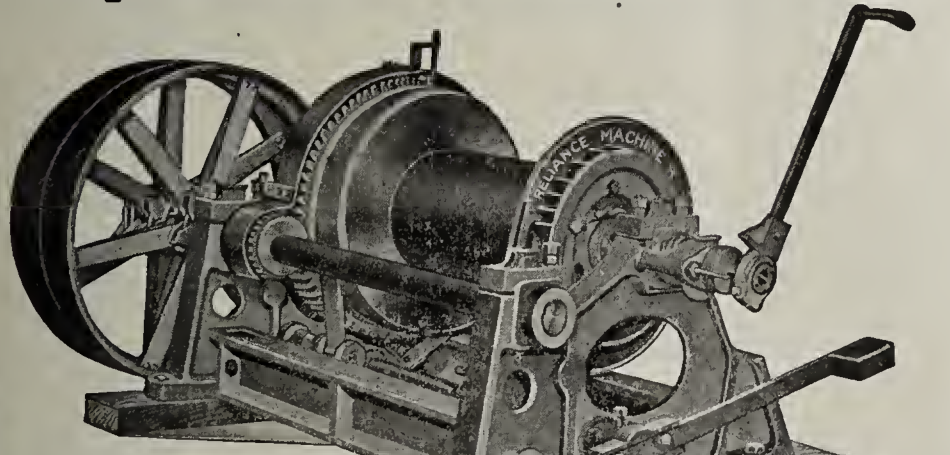
We Design and Equip Dry Press Brick Plants Complete

Improved Reliance Friction Drum Hoist



STEAM OR BELT DRIVEN

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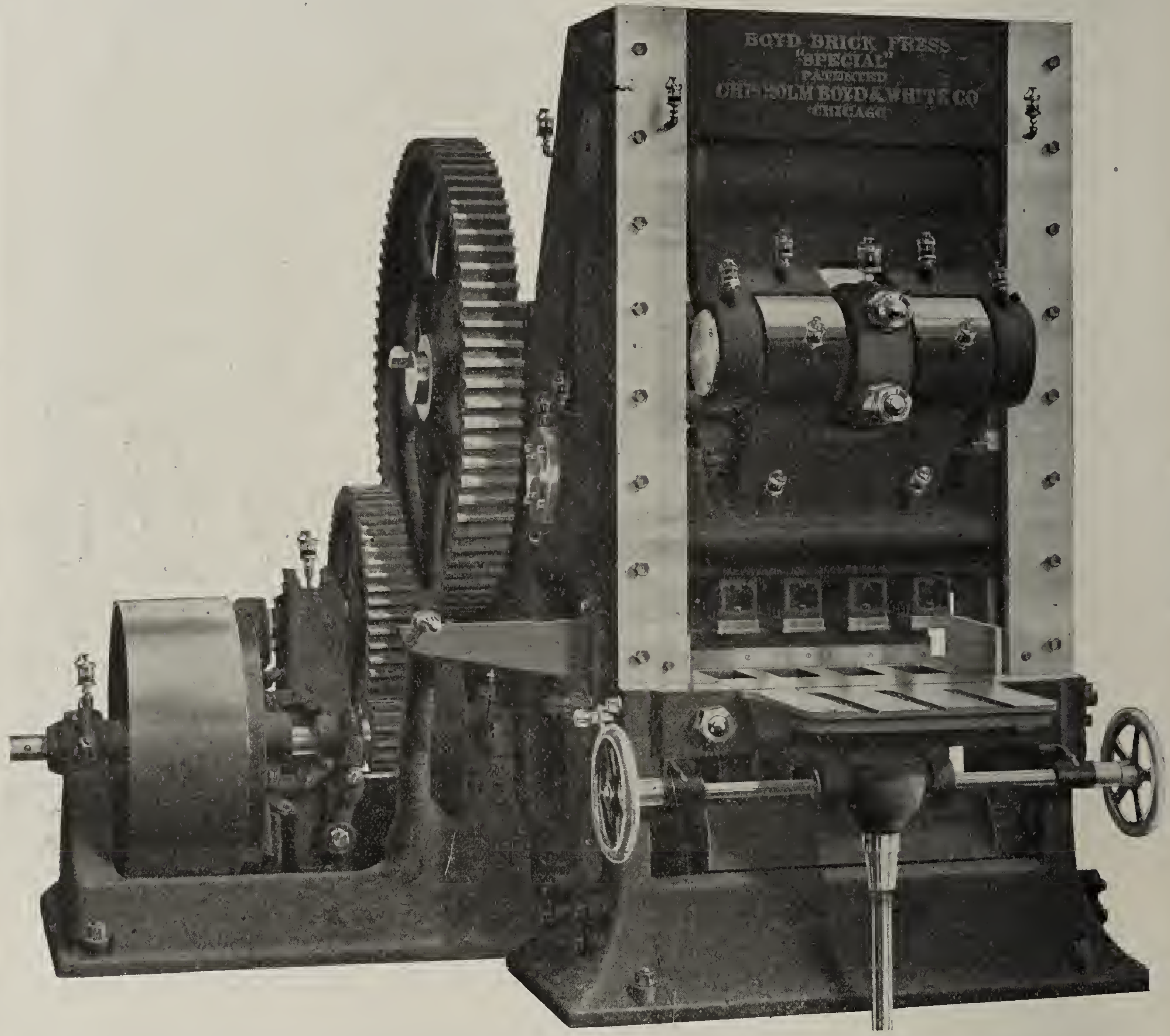

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BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

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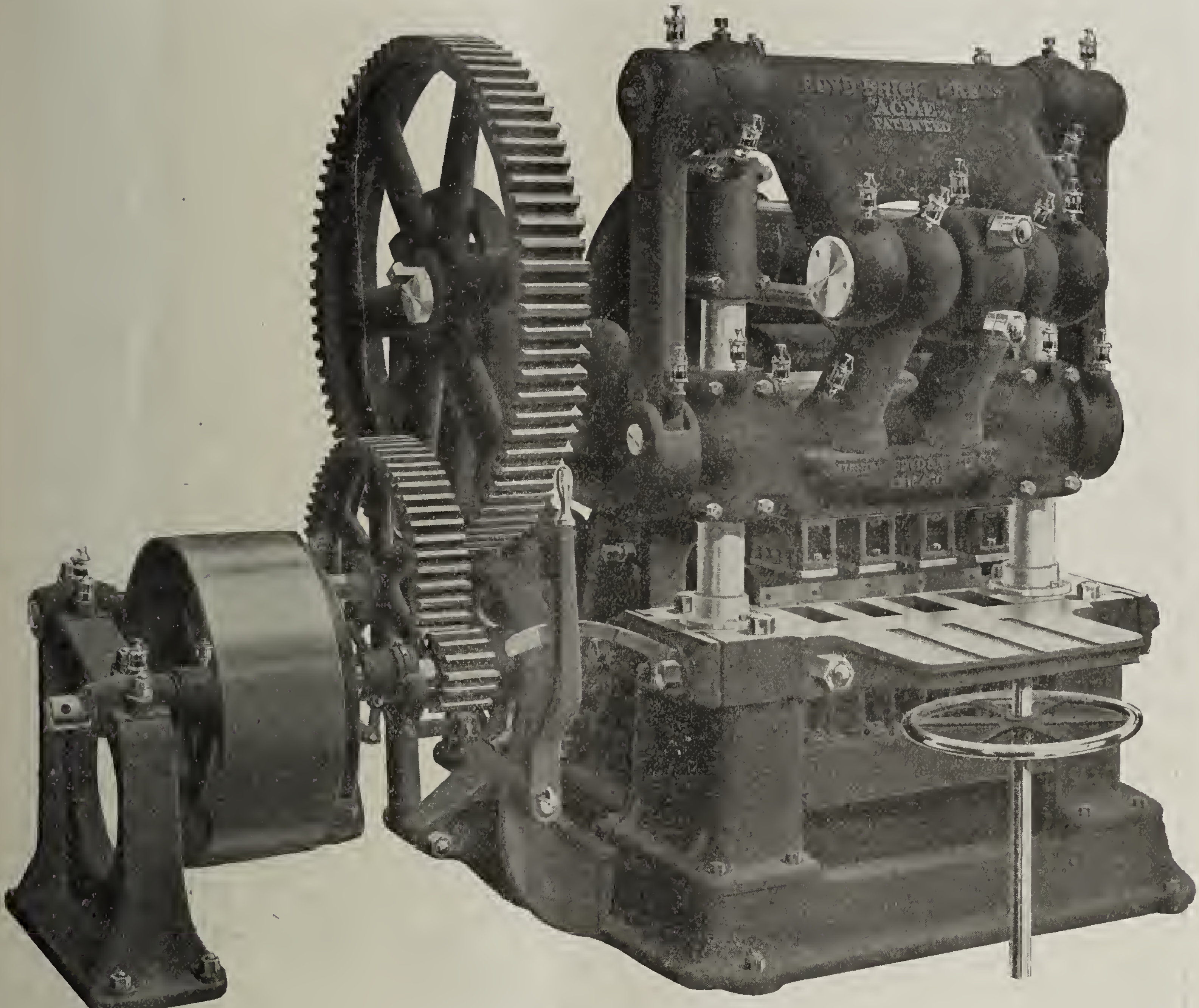

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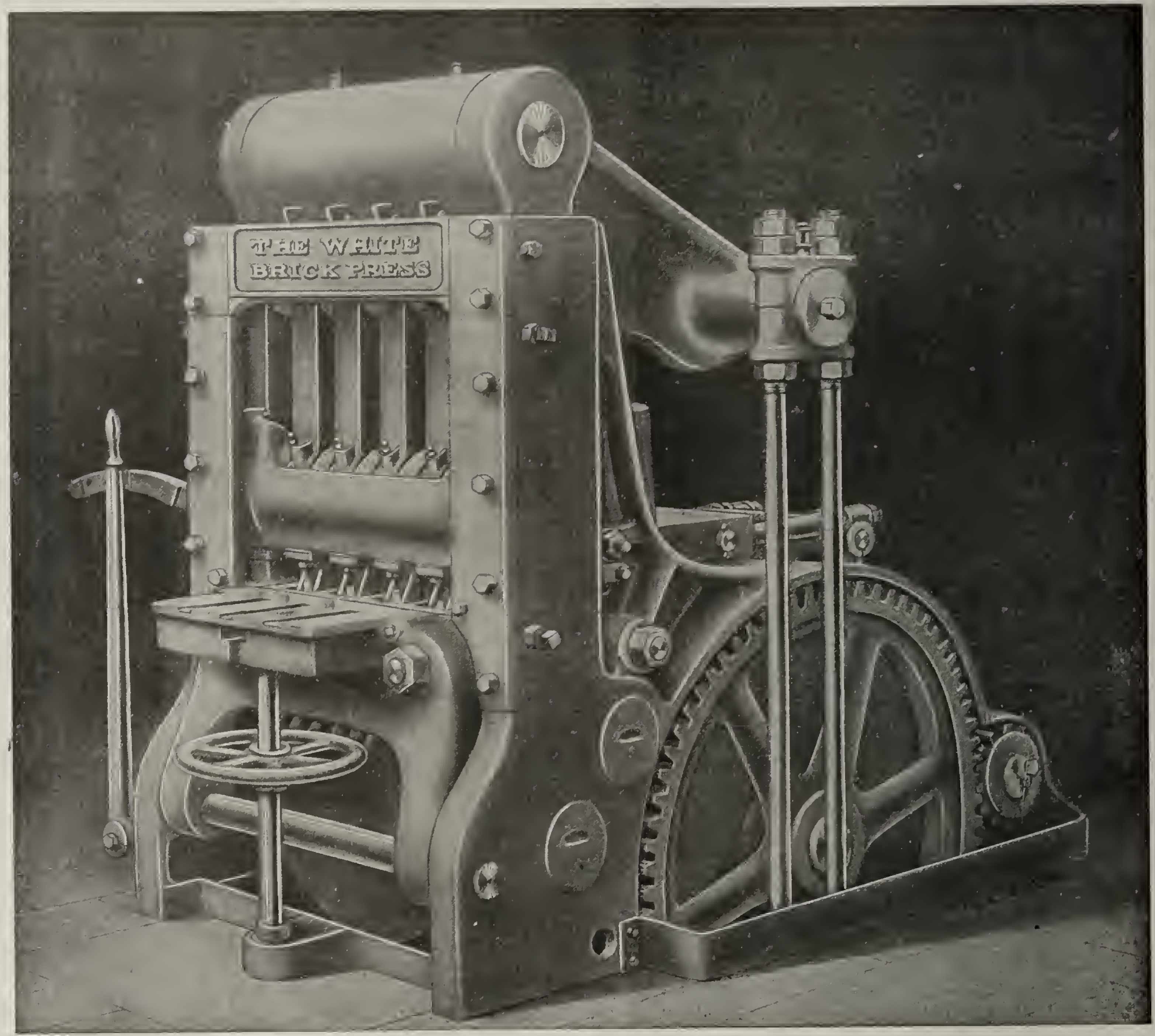

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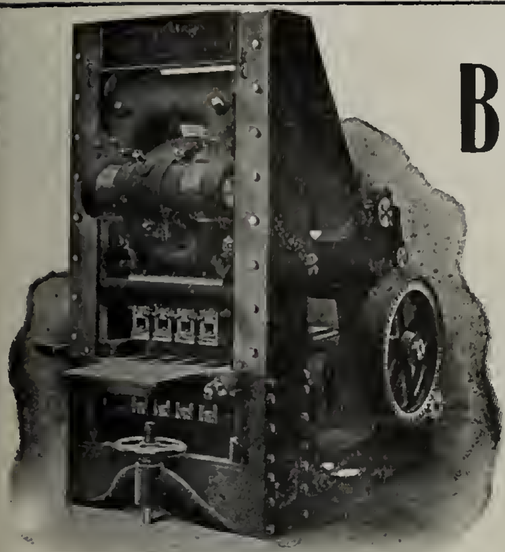
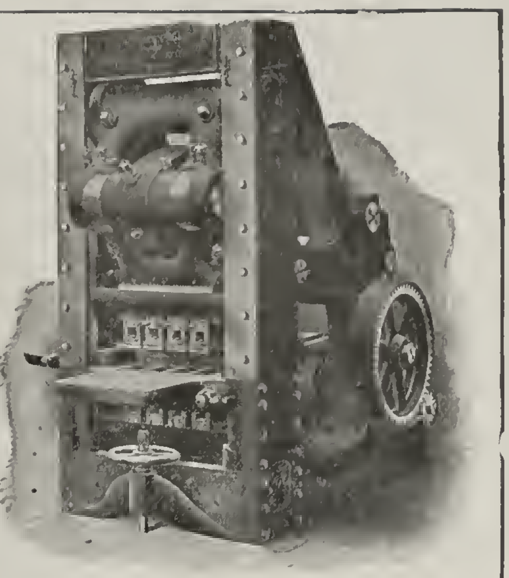
CHICAGO BRICK MACHINERY CO.

1308 GREAT NORTHERN BUILDING, CHICAGO





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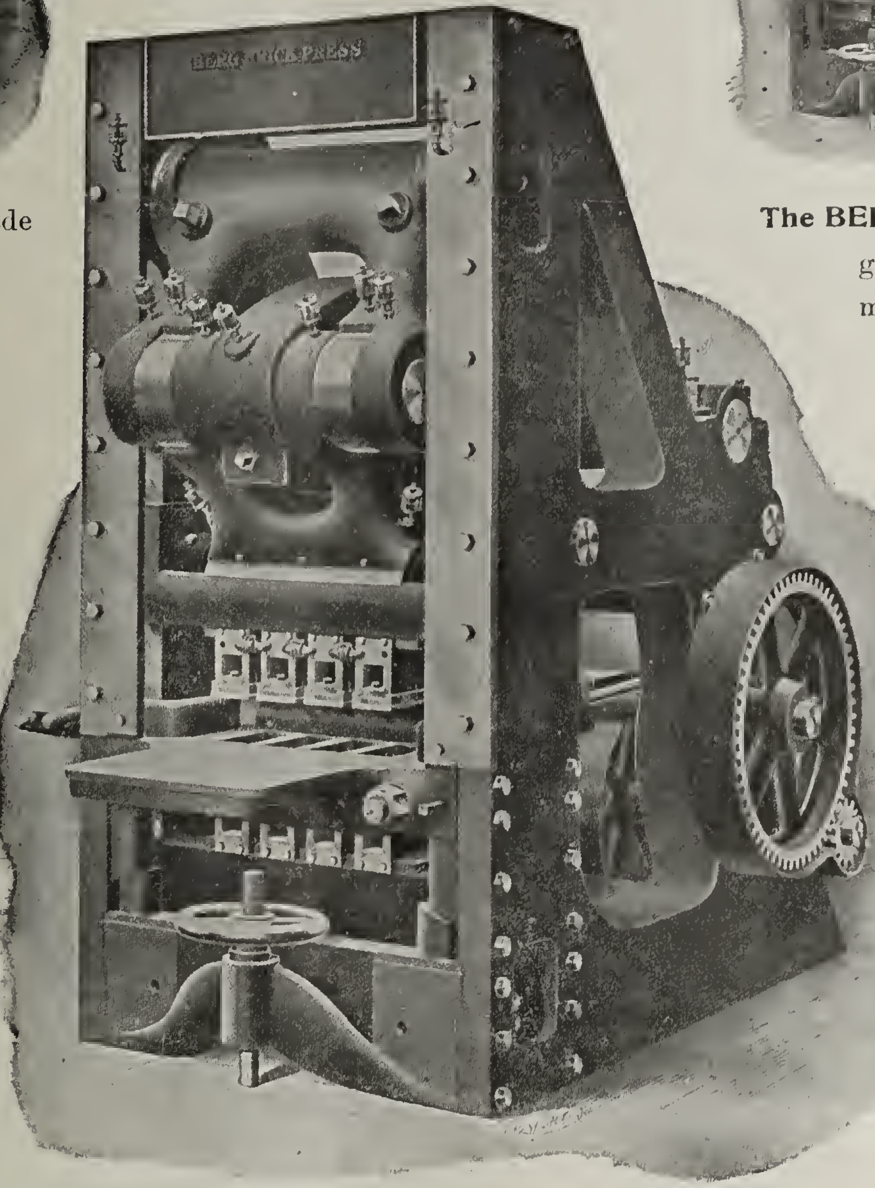
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.



The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

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Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

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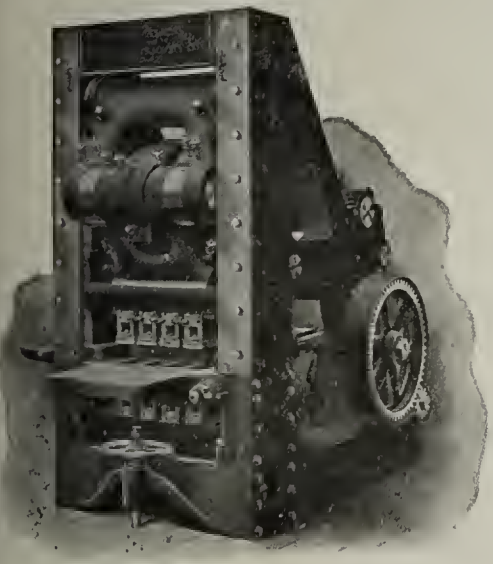
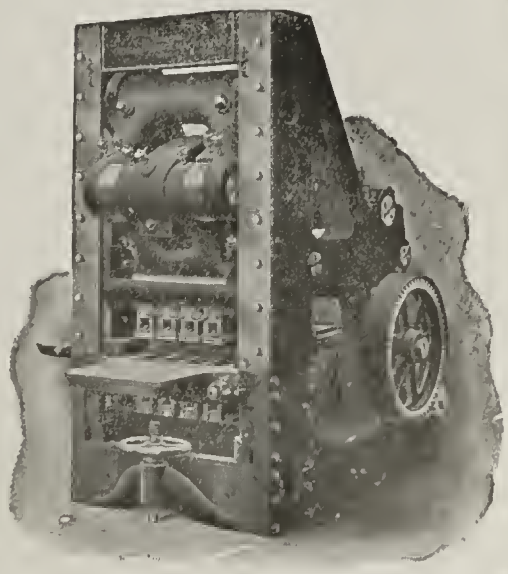
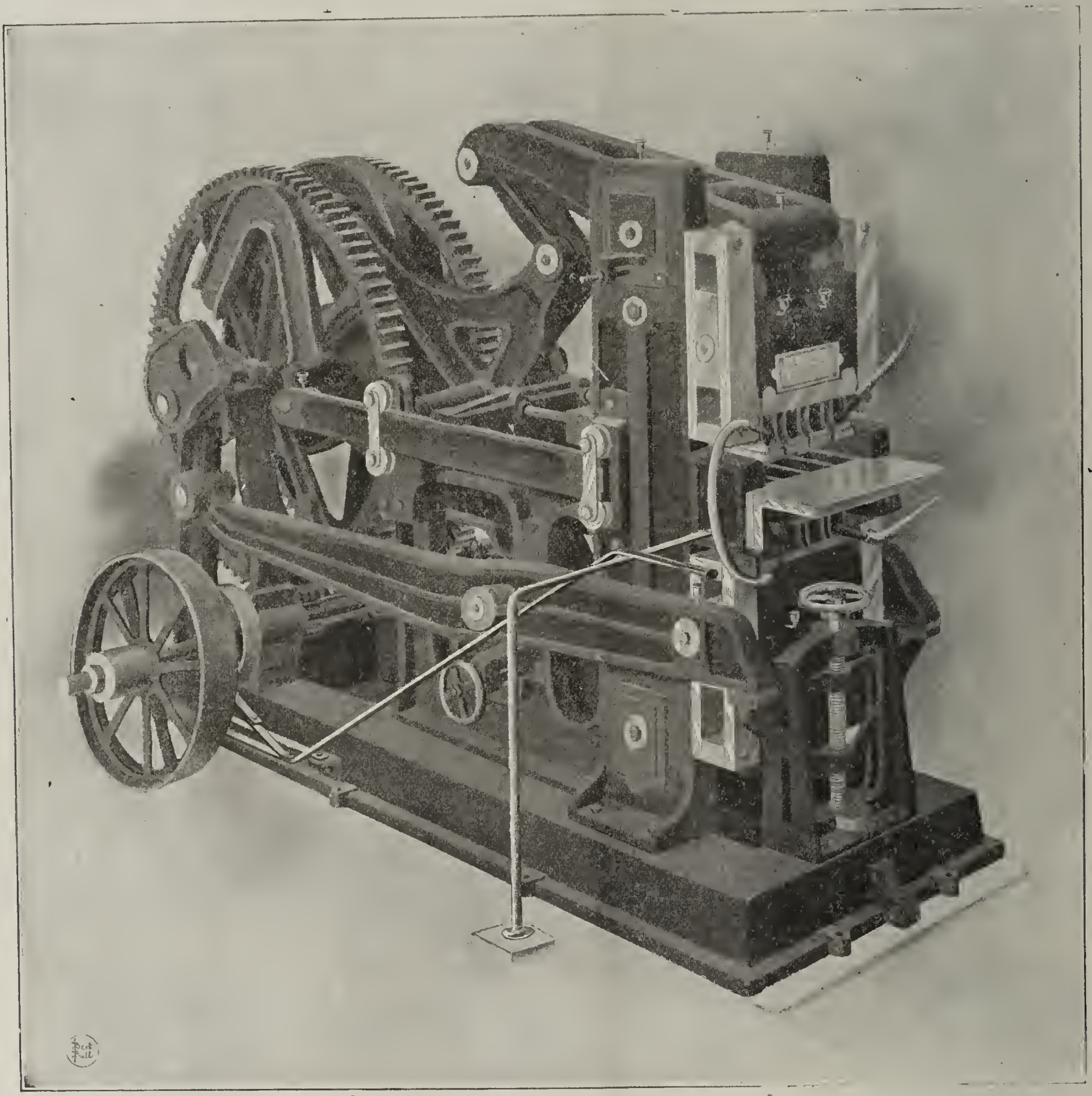




The Fernholtz Brick Press

Weighs SIXTEEN Tons, Built for Heavy Work

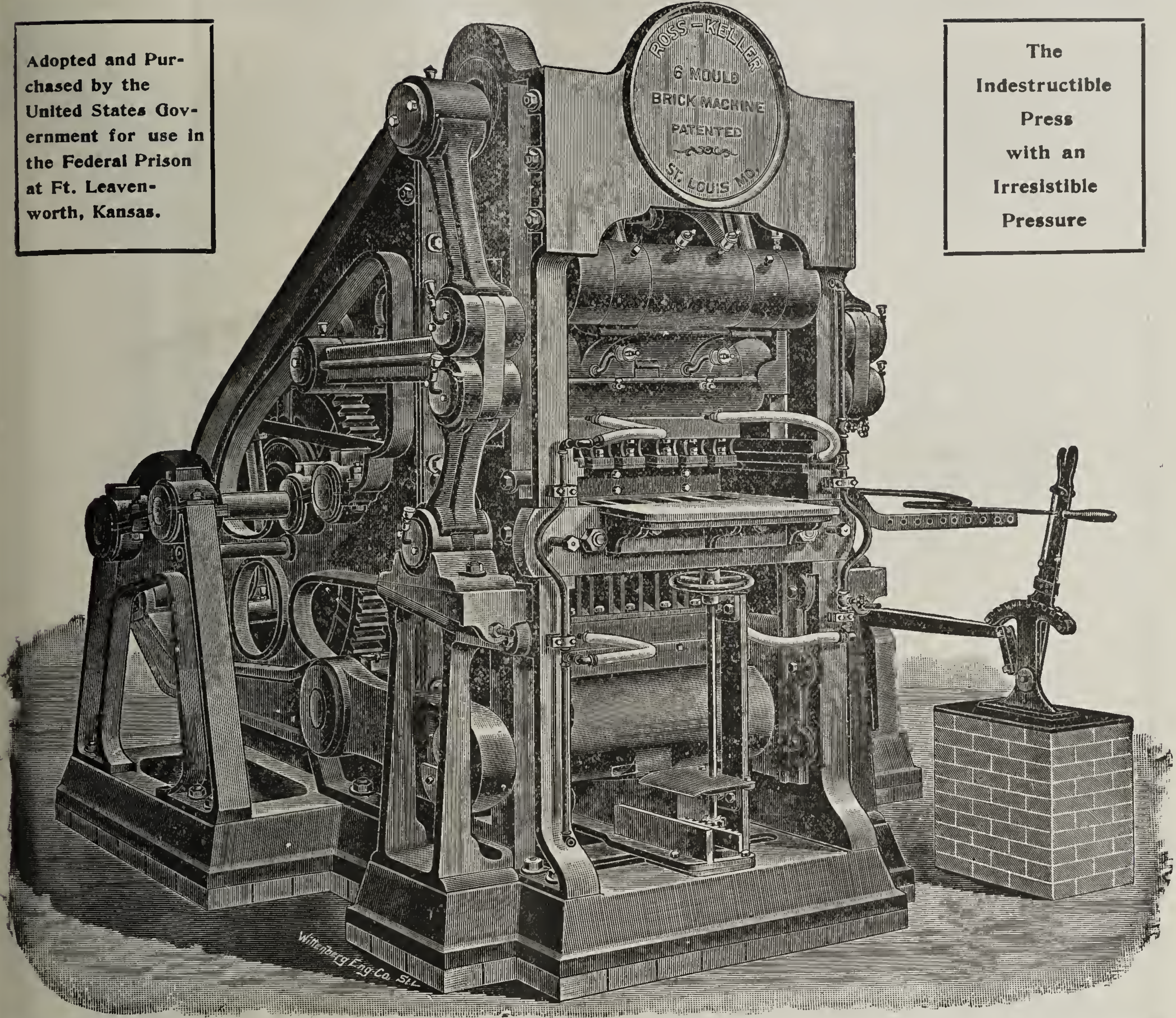


Holds Pressure on Material Longer and Presses it Harder with Less Power than any other Dry Press

The Fernholtz Brick Machinery Company
1446 Old Manchester Road, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The
Indestructible
Press
with an
Irresistible
Pressure



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Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

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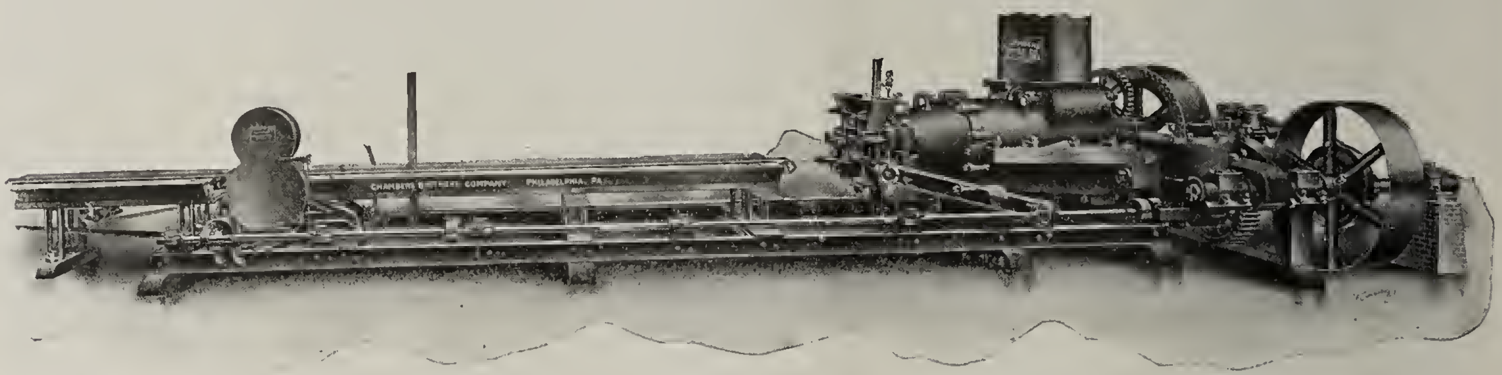

Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

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THE KEYSTONE DOUBLE DISINTEGRATORS

For Grinding Tough Clays in which Small Stones may be Imbedded

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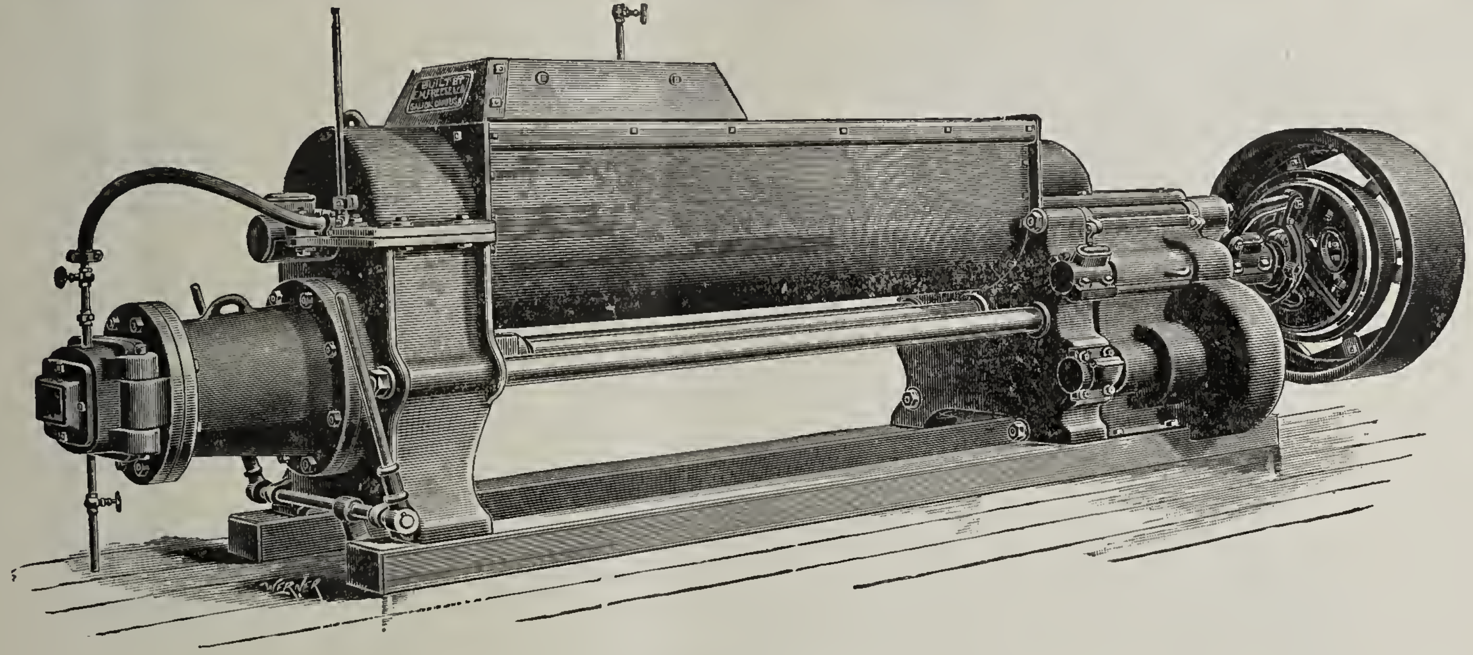

We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

State your requirements and let us furnish particulars.

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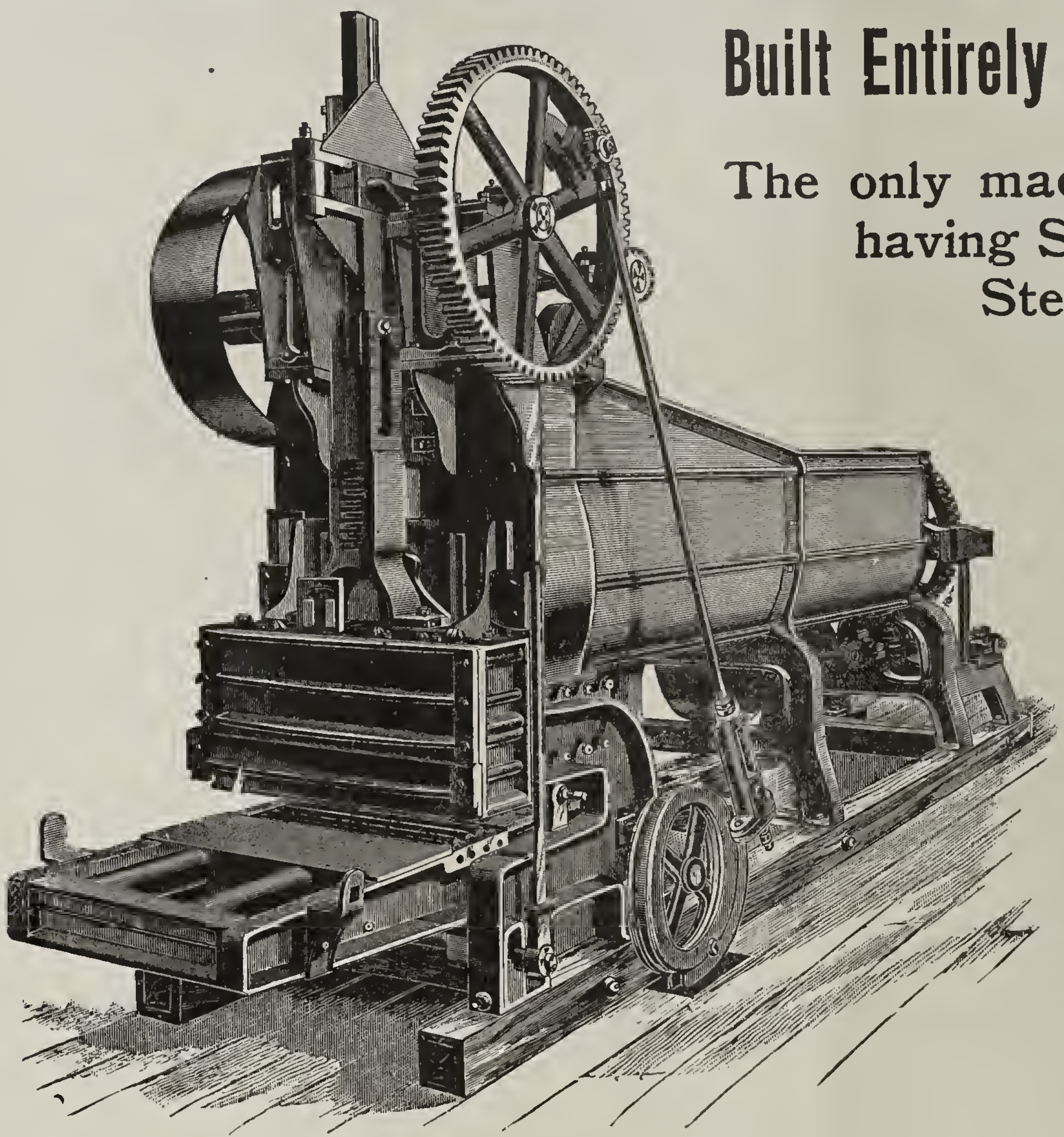
HORIZONTAL BRICK MACHINE



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The only machine of this class
having Steel Gear and
Steel Shaft.

Built of the Best
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Simple, Strong and
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No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

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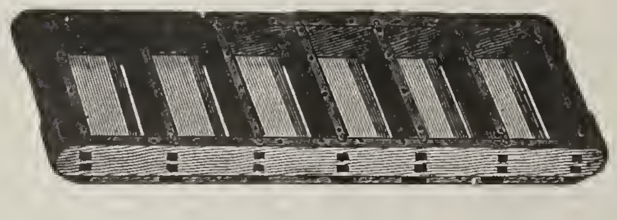

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We manufacture a complete line of Brick Yard Supplies. Write for prices.

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Compound Disintegrators and Crushers

As Manufactured by Potts

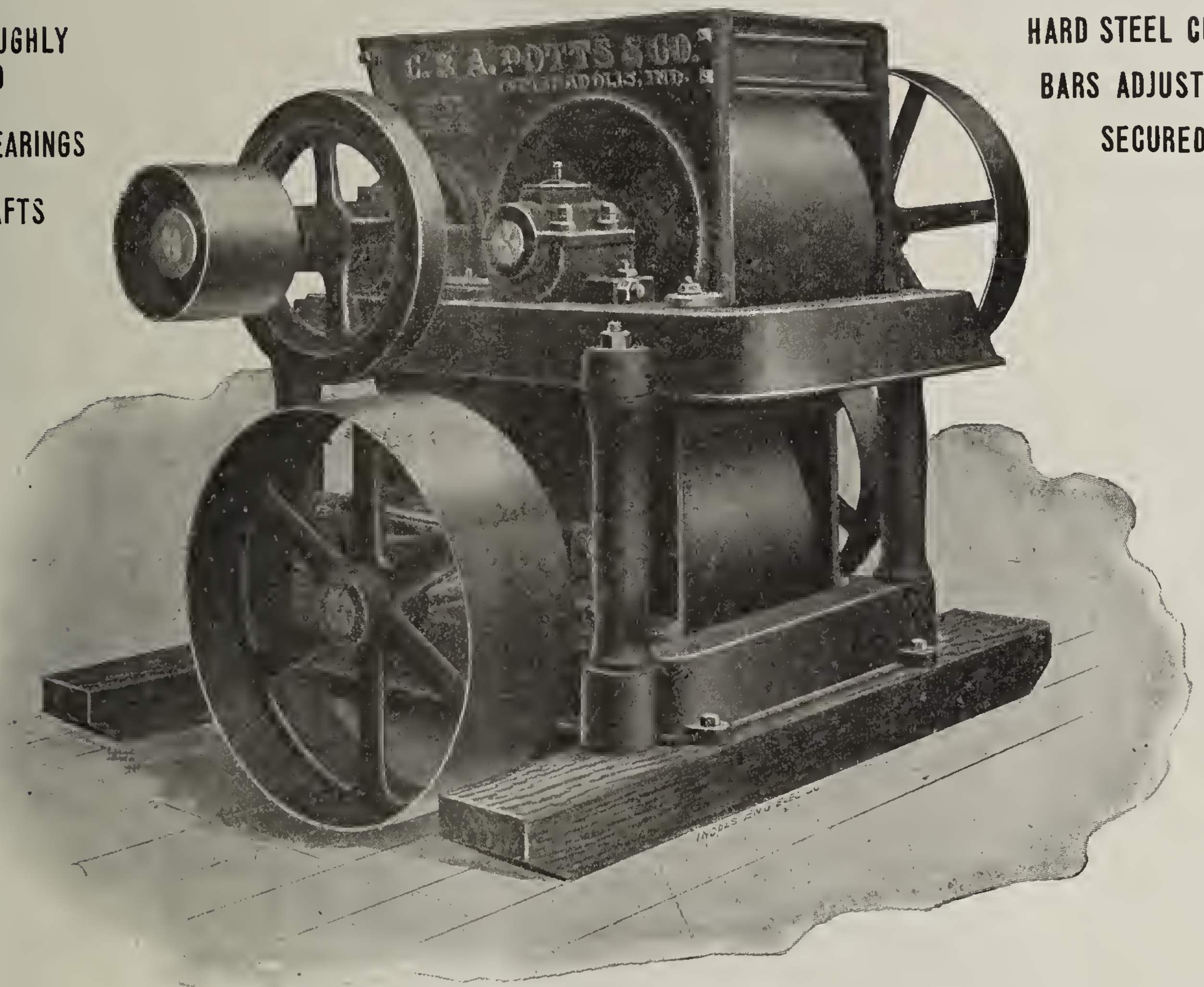
Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

ROLLS THOROUGHLY CHILLED

RING OILING BEARINGS

STEEL SHAFTS

HARD STEEL CUTTING BARS ADJUSTABLY SECURED


C. & A. POTTS & CO.
INDIANAPOLIS, IND.

Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank. Will not choke or clog from hard, dry or wet, sticky clays. The MOST GENERALLY USED Machine on the market.

Built to Do the Work

Manufactured by

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The Only Mill for Successfully Making Tile from 3-inch to 24-inch Diameter

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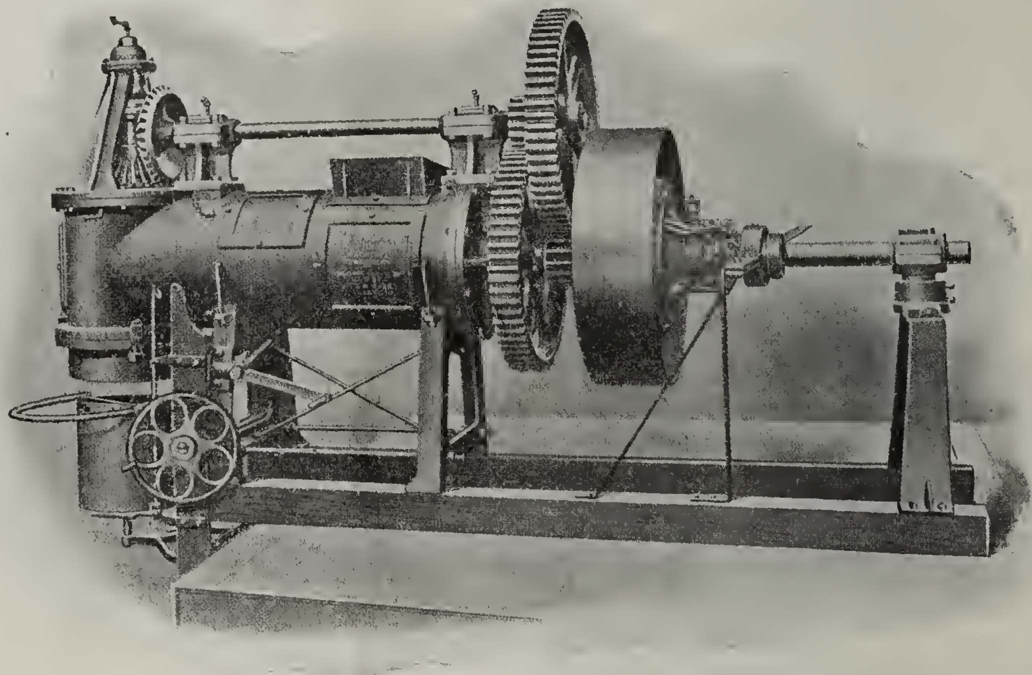
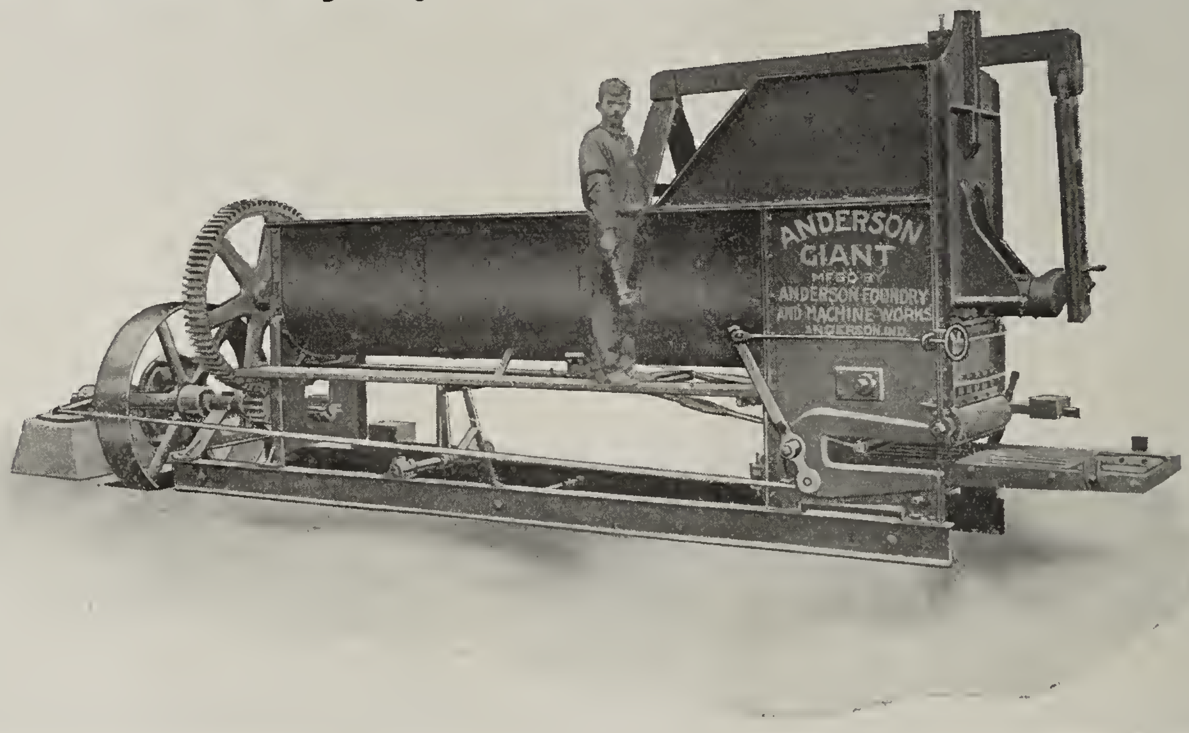
Power Required to Operate, 40 per cent Less



Our New 1909 Model Anderson Giant



We also Manufacture a Complete Line of

Dry Press Brick Machinery and Brick Yard Supplies

Write us your needs and let us figure with you.

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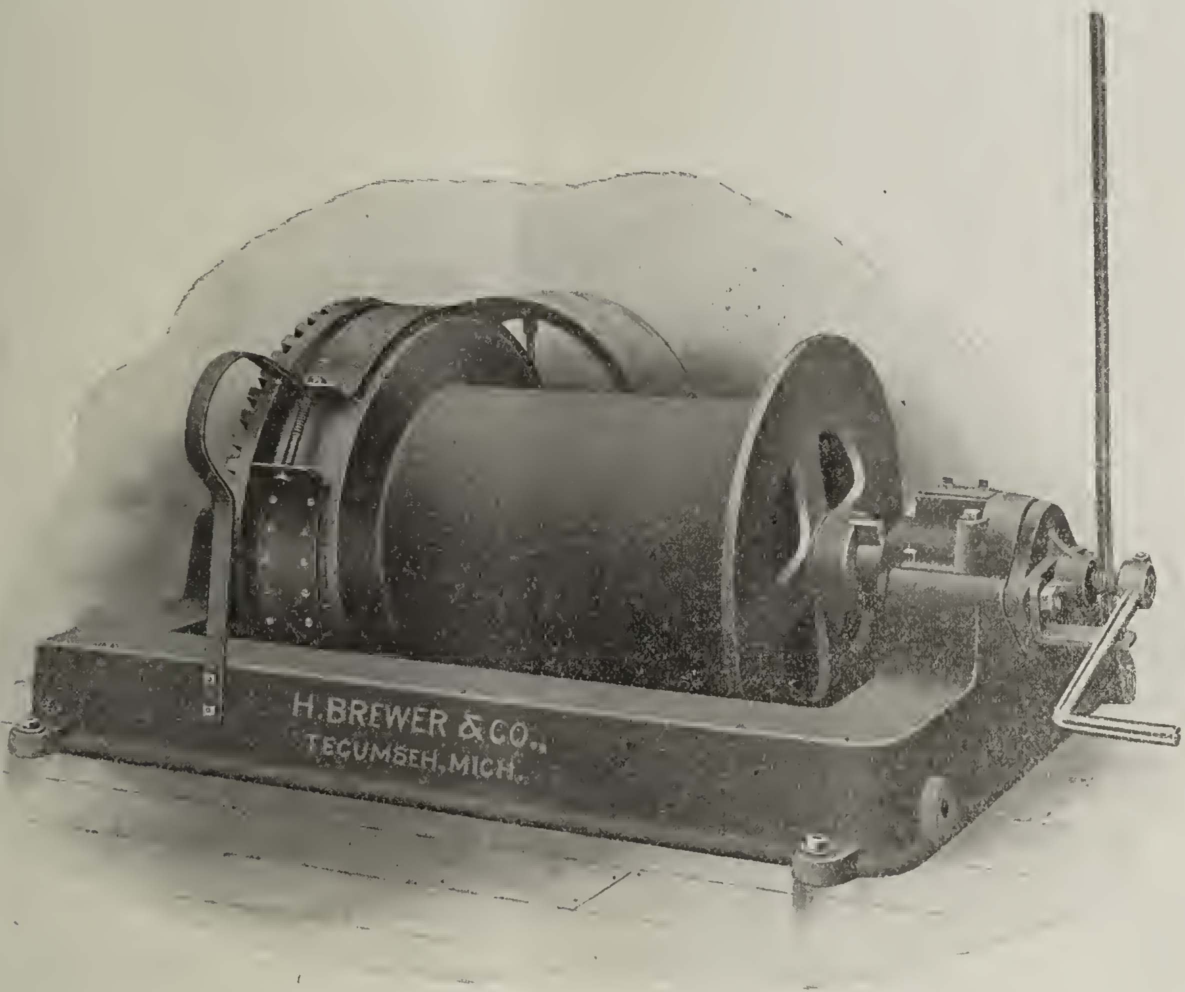
HOISTS

If you need a good Hoist, we have it for you. We have both spur geared and bevel geared, spur friction and bevel friction patterns. A style and size for every requirement.



THE BREWER No. 28

This is a bevel geared Hoist, large and heavy enough for anybody's brick yard. It weighs 3,000 pounds. The drum is 20 inches in diameter, 28 inches between flanges and the flanges are 30 inches in diameter. The gears are 4 inches face, and brake band 5 inches wide and bearings are self-oiling.

We would like to send you our catalogue showing our full line of clay working machines

If Marked
BREWER
It's Good

H. Brewer & Co.

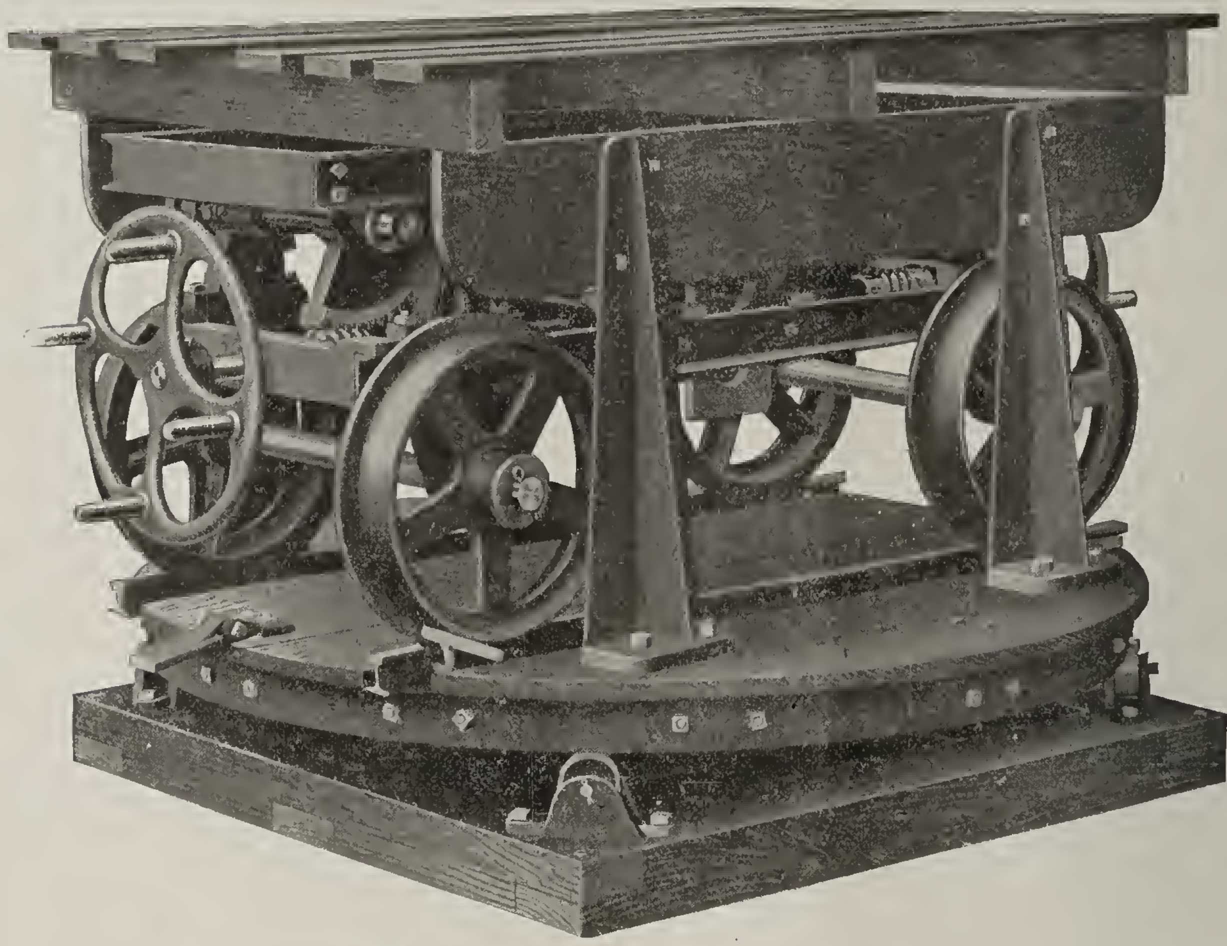
TECUMSEH, MICHIGAN

If Marked
BREWER
It's Good

THE GUILDER ELEVATING AND LOWERING BRICK CAR

And Turn Table Used with Same

The most perfect car of the kind made. Easy to handle. Operated from either end. All iron and steel. Raised and lowered by Worm Gear and Segment.

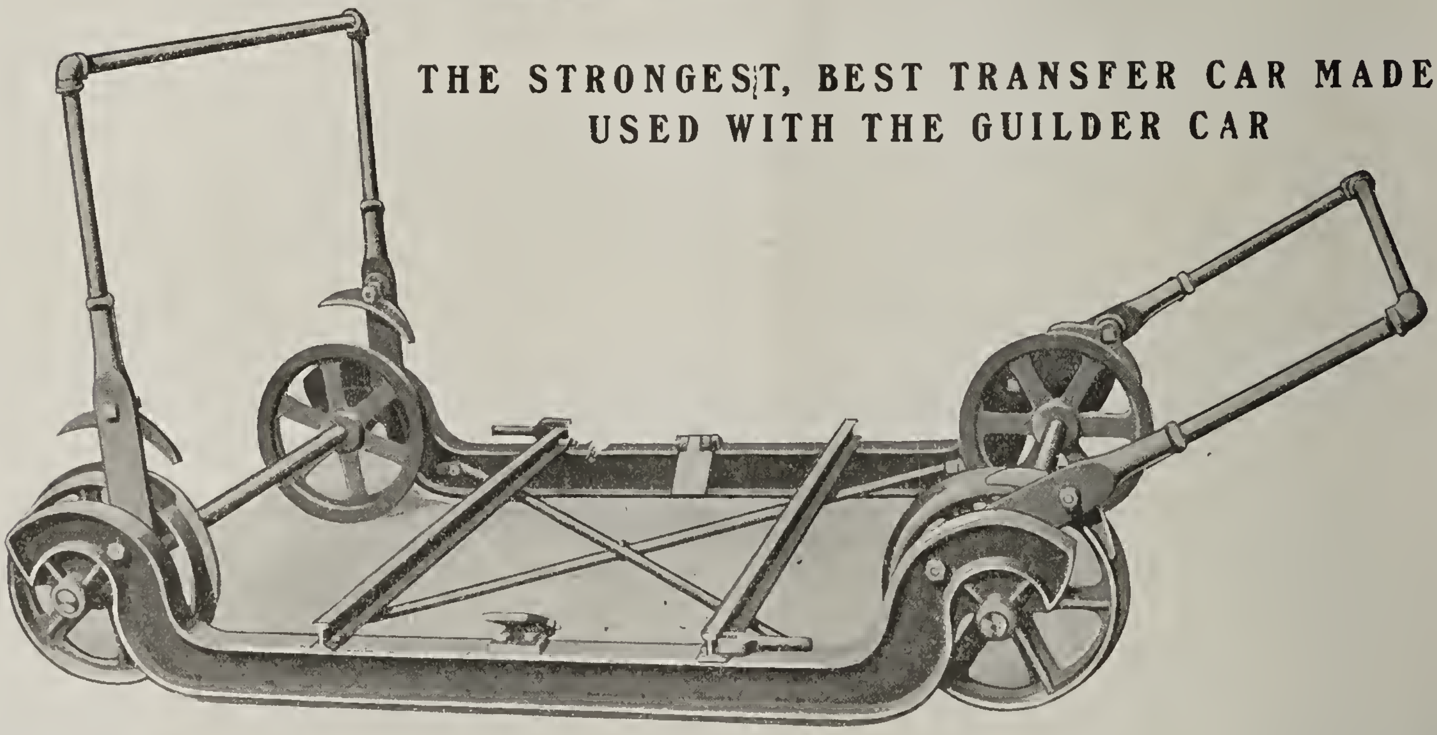


No Charge for plans or for the right to use this system.

❧

Pay only for what you get and nothing for a piece of "Blue Sky."

THE STRONGEST, BEST TRANSFER CAR MADE USED WITH THE GUILDER CAR



Write to the J. D. FATE CO., Plymouth, Ohio, about this system

CLAY RECORD

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXIV. No. 7. CHICAGO, APRIL 15, 1909. Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

NEW SILICA BRICK PLANT OF THE HARBISON-WALKER REFRACTORIES CO.

The significance of building a plant in the district about Chicago, for the manufacture of silica brick for refractory linings is associated with two comparatively recent developments. On the one hand, the discovery and opening up of the Wisconsin ganister deposits have disclosed very desirable refractory material, and on the other hand the growth of steel making in the west, both realized and prosepctive carries with it tremendous refractory brick requirements. The mere establishment of steel plants in the west is made doubly more important from the standpoint of silica brick because of the almost complete turning to the basic open-hearth process and because of the equally certain establishment of large capacity by-product coke ovens. These two considerations —raw material supply and finished material market as they are found here—suggest at once the occasion for this plant, its possibilities for growth and something of the kind of plant farsighted discernment would propose for building.

The Harbison-Walker Refractories Co. has laid hold of this opportunity to a very great extent. Beginning construction on April 1, 1907, a brick making plant has been erected in which the most modern construction, equipment and methods known to brick manufacturing have been incorporated and which is so laid out as to permit of its indefinite extension as the trade which it supplies may expand. As in all other plants where to obtain the best is specifically the prime consideration, the one objective point in this instance has been to make possible; permanently, the manufacture of a product of highest quality with the lowest possible handling cost.

The plant is fireproof throughout, of brick, concrete and steel construction and built with the company's brick and by the company's labor. A general view is shown in Fig. 1, including a main brick making building with unloading trestle, crusher, elevator and storage bins, six kilns with three boiler houses, a warehouse and an office building. The present capacity of the plant is approximately 35,000 9-inch silica brick per day. The warehouse or storage shed will accommodate a stock of 1,200,000 brick.

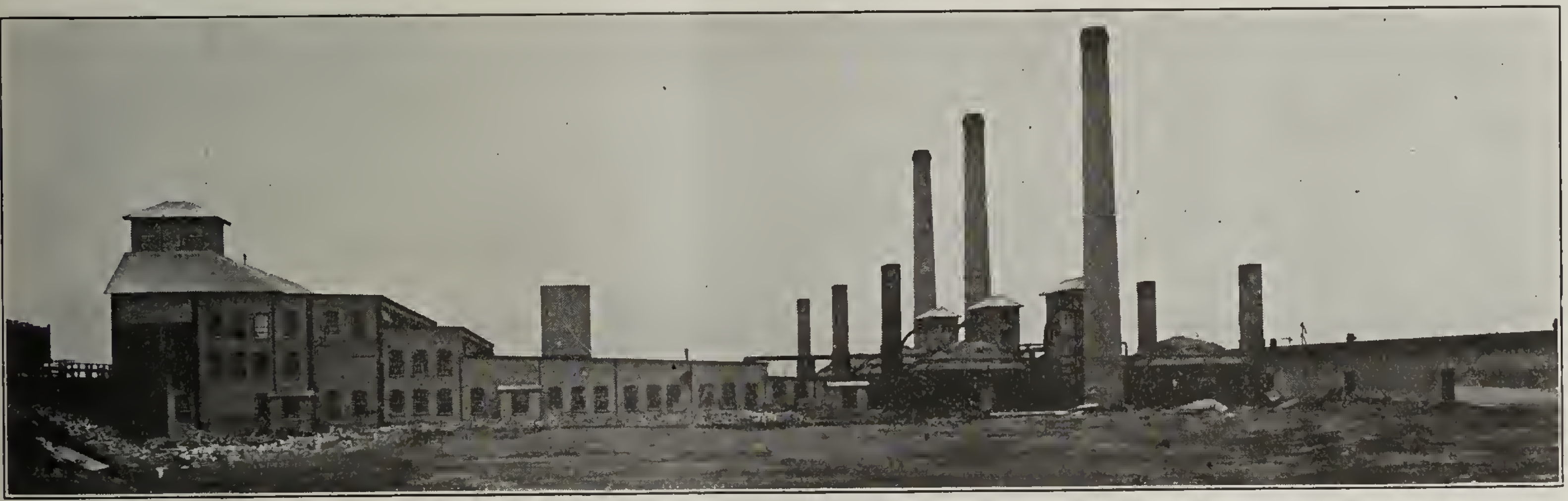


Fig. 1. The new Silica Brick Plant of Harbison-Walker Refractories Co. at East Chicago

The features of distinctive interest in connection with this plan are the construction of the main building, the provisions for mechanical handling of the brick, the preliminary drying ovens, the accurate measuring of material for mixing, the steel ganister mud tanks, the method of firing the kilns and the burning of Illinois coals and the use of waste heat under the boilers.

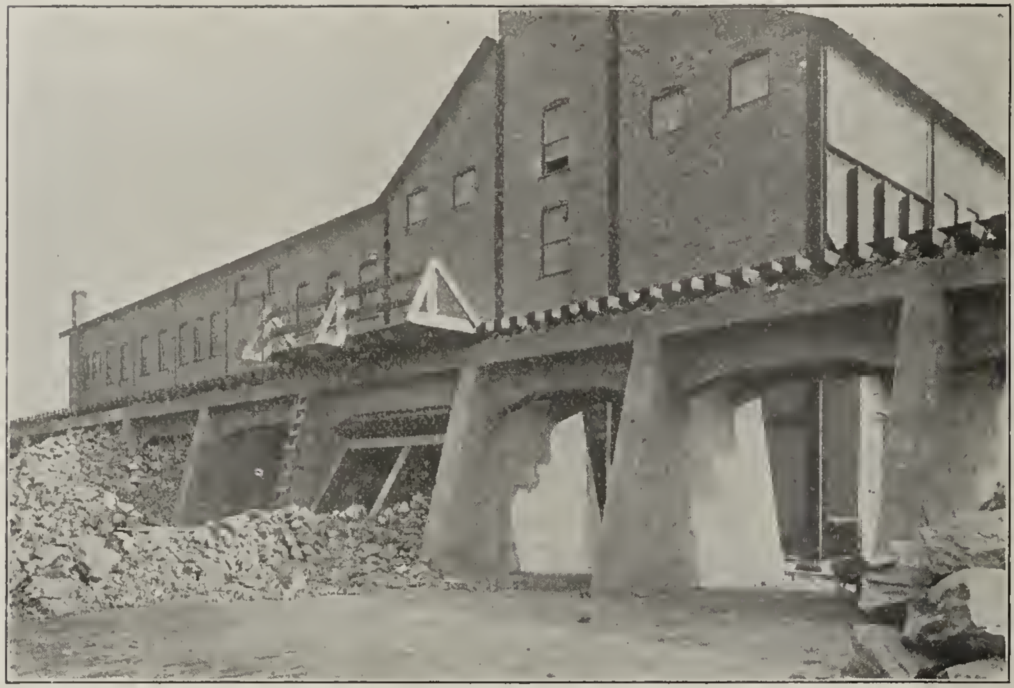
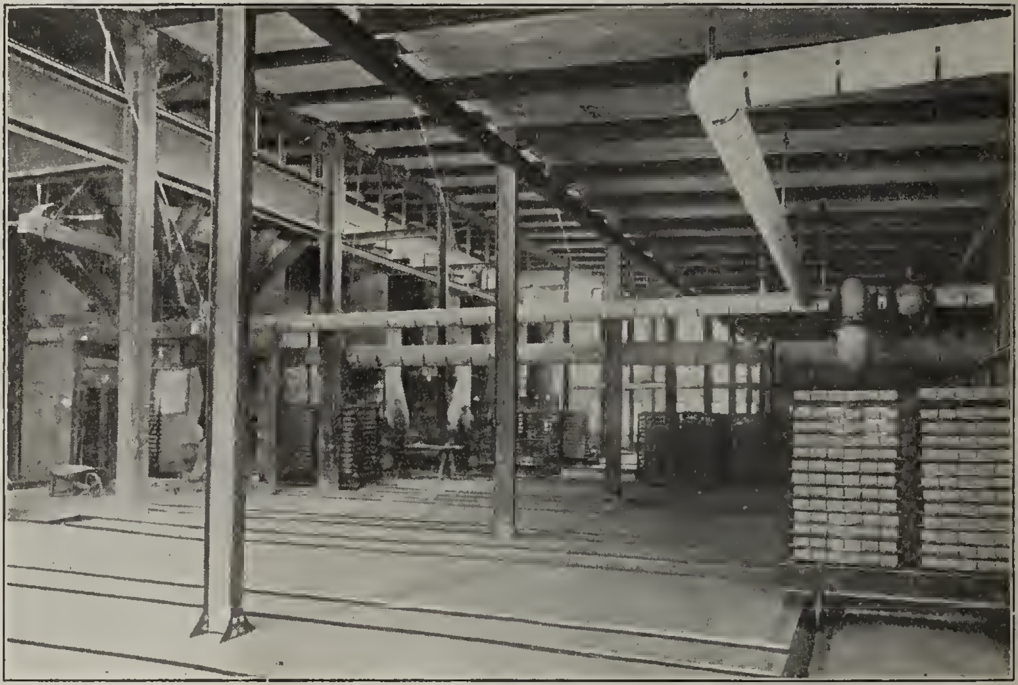


Fig 2. Trestle for Ganister and Coal

The ganister in use at East Chicago comes from the Devil's Lake district of Wisconsin, where it is quarried out of the deposit and broken up into the shape in which it is shown in Fig. 2, which view also shows a portion of the concrete trestle on which it is brought in. This trestle extends for a length of 500 feet at a height of 15 feet, is immediately alongside of the building and is used for bringing in the ganister, the coal for firing the kilns, and the lime to be slacked and used as binder in the brick mixture. Much of the ganister is simply stored under the trestle and wheeled into the crusher with barrows. So far as possible, however, the ganister is dumped directly from cars to the crusher and for that purpose grizzlies of rail sections are set up in the arch over which the wooden railing is shown in Fig. 2. The crusher is of the reciprocating jaw type and discharges into the boot of an endless bucket elevator in which the ganister crushed to the proper size, is carried up to steel storage bins.

The main building is built of brick and structural steel, something of the character of its construction being evident from the general view Fig. 1 and the interior view Fig. 3. This interior view does not exaggerate the surprising cleanliness of the plant. That half of the building shown to the left of the center line of columns contains at one end the two mixing pans, shown in Fig. 4, and at the other end a general storage and repair room. Directly behind the mixing pans are the crusher, elevator and storage bins, and above the repair shop is a machine and carpenter shop in which all the molds for the plant are made.



Brick Making Floor

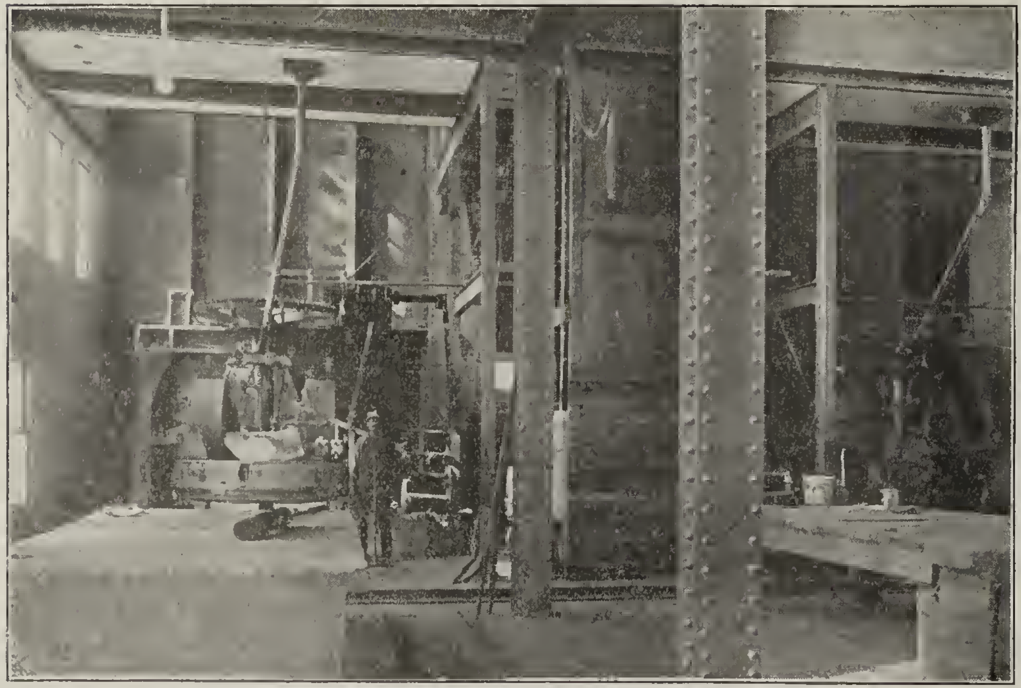


Fig. 4 Grinding and Mixing Pans for preparing Ganister

A view of the machine shop is shown in Fig. 5, in which view may be seen the manner in which the roof of the building is constructed. It consists of slate roofing supported directly on light rail purlins to which the slates are tied with wire. The floor is concrete on expanded metal. The molding tables are also arranged in a row on the left side of the main room as indicated in Fig. 3 with the mud tanks above them. Above the molding tables and hung from the ceiling at such a height as to permit the tops of the mud tanks to project through, is a gallery extending almost the length of the room. At one end it runs over the mixing pans, Fig. 4, and at the other end far enough to take in all of the mud tanks, and an entrance to the machine shop. Along the opposite or right side of the rooms are the drying ovens, Fig.

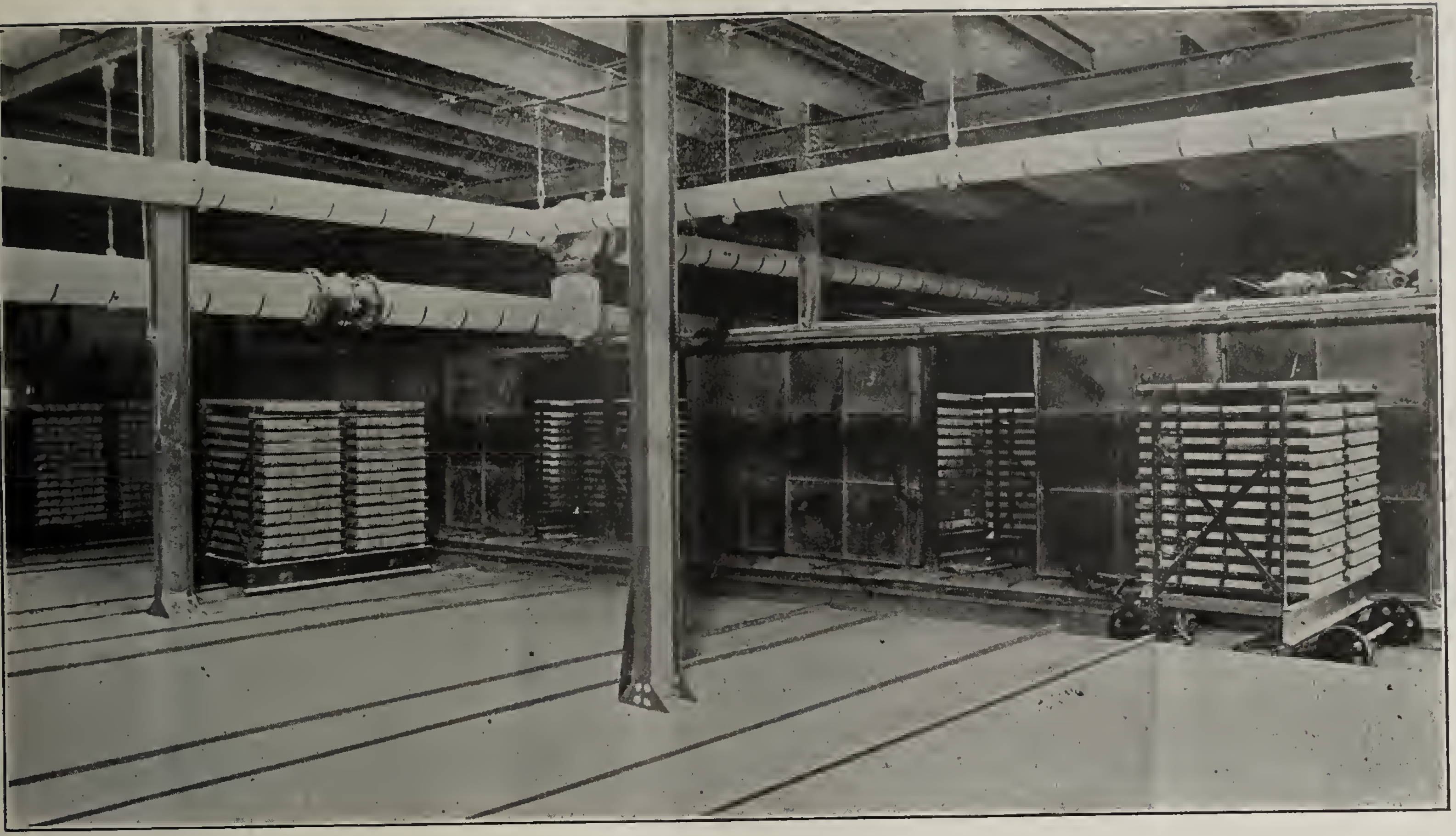


Fig. 6, The Drying Chambers in the Main Building

4. At the far end of the main room as one sees it in Fig. 3, is a hot floor for drying special shapes. This floor has an area of 2,500 square feet and is a concrete floor in which steam pipes are buried. Back of the drying ovens is sufficient floor and track space for the storage of quite a number of brick and the inspection of the dried brick in the brick cars before running out to the kilns. The over all ground plan dimensions of the building in which this layout is included are 141 by 166 feet.

The handling of the material which goes into the brick begins with the loading of the charging boxes directly back of the mixers as seen in Fig. 4. This charging box is hung on trunnions directly beneath spouts from the storage bins and is filled by gravity. Its capacity is such as to charge into the mixing pan, when dumped, the correct quantity of ganister for making the standard quality of brick on a 15-minute grinding schedule. The lime milk is made on the gallery just above the mixers. Three mixing tubs are installed for each pan. Lime is being slacked in two of the tubs while the third is supplying through the pipe shown in Fig. 3, the lime milk for the ganister being ground. A steel plow share is mounted over the front of the pan so that it can be lowered into the pan, as shown in view of the mixers, and the rapidly moving ganister mud is then turned out over the edge of the pan with great nicety and drops into a truck alongside. This car is run on to the lift elevator close by the pans and is carried up to the gallery, which has a steel floor, and the truck is pushed along it, to whichever tank is desired, and dumped. The mixing pans are of ordinary type, 7 feet diameter.

A larger view of the mud tanks is shown in Fig. 7. Of these there are five, two of which are 4 feet diameter and three 6 feet diameter. All are 19 feet, 6 inches high and they will carry enough mud to make a 12-hour run of bricks on one molding table. This would enable the plant to run one day and night shift with but 12 hours operation of the mixers or would prevent any temporary holding up of the mixers from delaying the brick molders. The system of

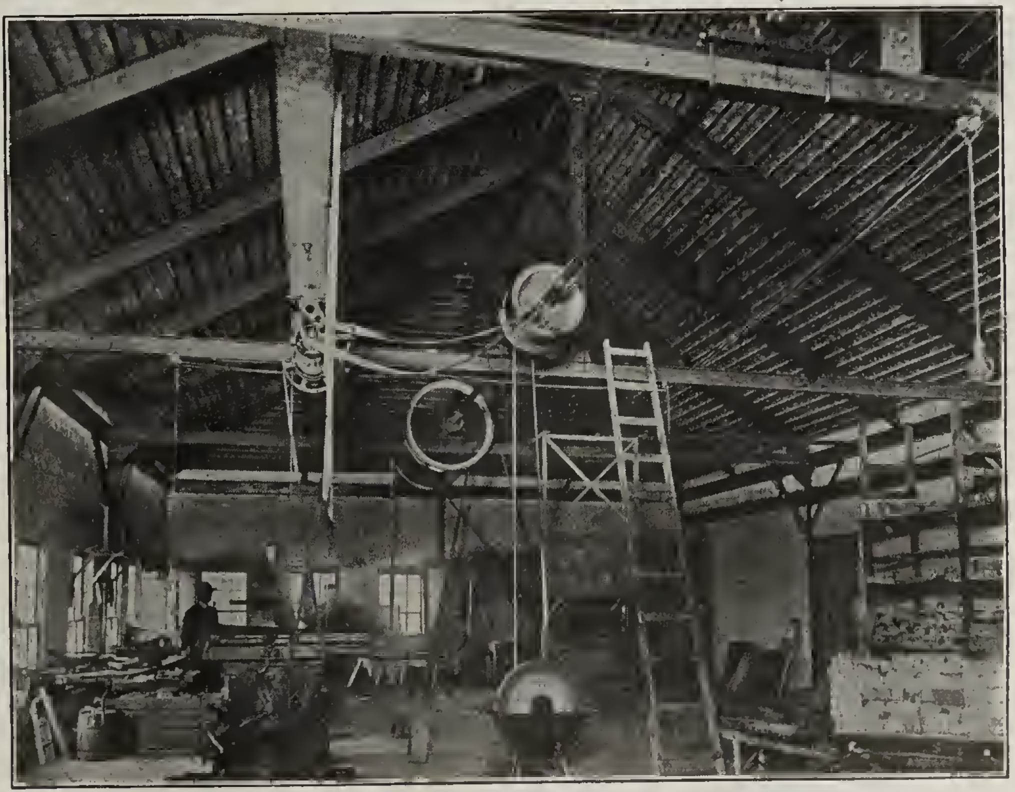


Fig. 5. Machine Shop, showing Roof Construction

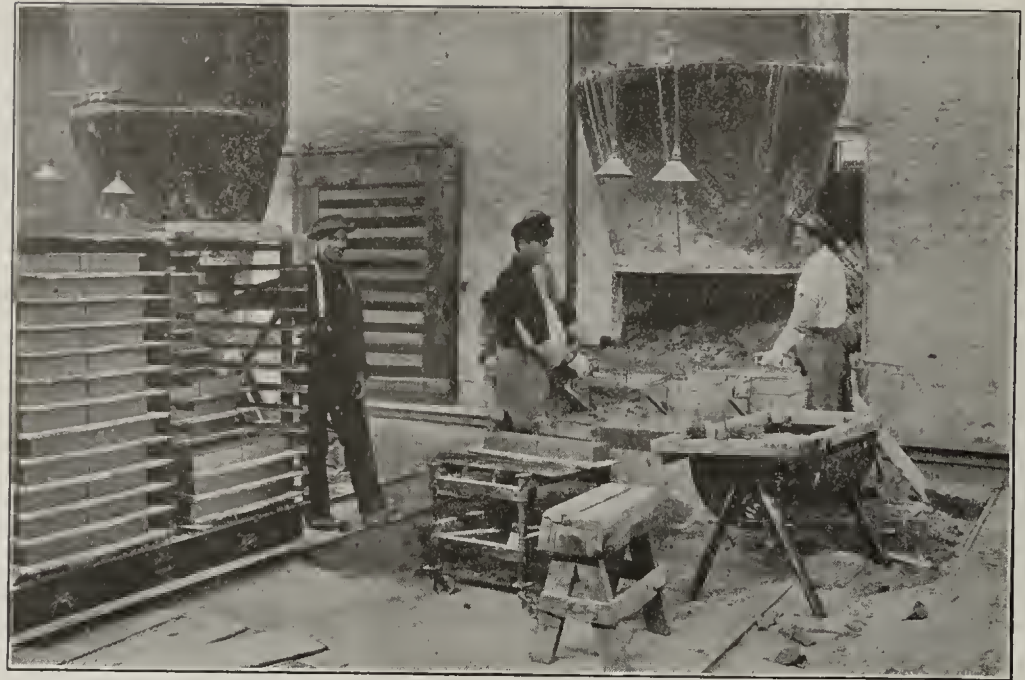


Fig. 7 The Moulding Table and Mud Tank

overhead charging of material leaves the floor clear for the handling of the molded brick. Two molders work at each table with two helpers. Steel molds are used entirely.

After the mixture has left the molds it is not touched again until it is hard and dry and at the kilns ready to be piled for firing. The floor is of solid concrete and in it are imbedded 16-pound rail tracks of 24 inches gage, which traverse the floor and serve each molding table with brick cars as indicated in the illustrations. On the opposite side of the floor is a longitudinal track on which runs a transfer car. This latter track is depressed below the others, and the transfer car is so designed that the brick cars may be run onto it and off again into the drying ovens at any point desired. Rails are laid in the floor of the ovens in a manner similar to that on the main floor and extended through the opposite sides of the ovens connecting with a common track which runs over to the kilns.

The molded brick are turned out on steel pallets, placed on the cars, run into the ovens and dried there at a temperature of 140 degrees Fahr. for 48 hours. The ovens will accommodate 140 cars at one time and as each car carries about 624 9-inch brick the ovens have a capacity of approximately 80,000 brick. When the brick have been dried they are quite firm and hard which permits of their being piled in the kilns without injury. Quite as important, however, is the fact that this preliminary drying shows up whatever defects may happen to exist in the brick and in the examination to which they are subjected immediately after coming out of the ovens these defects may be detected and the brick thrown out. The ovens are heated by a suction blower arrangement placed at both ends of the ovens. The air is heated by being forced through coils through which exhaust steam is circulated in the usual manner of this system of heating.

There are six circular kilns, 32 feet diameter, of the ordinary dome construction. The method of firing, however, was developed with this plant and has been patented by the Harbison-Walker Refractories Co. There are eight sealed firepots around the circumference of the kiln. These firepots have no grate bars but simply for feeding the coal, a short slope which is kept continually filled so as to close the narrow charging aperture with black coal. Air for the fire is taken in from an opening near the fire pot and through a passage in the wall of the kiln so that the air used in combustion is pre-heated. The particular feature which has brought about the use of Illinois coals for this firing is the installation of a live steam jet into the lower part of the firepot. This forced draft jet enters the firepot from the side and is controlled by a valve on the outside of the kiln. A one-half inch jet is used. An ash hole temporarily sealed is provided for cleaning the fire every six hours. On the inside of the kiln a brick checker work is built around each firepot and the direct heat is deflected from these brick which are piled closest to the fire. In this way the heat in the kiln is obtained fairly uniform near the circumfrence of the kiln as well as near the center where a central bottom passage carries off the hot air to the boilers. This protection and the method of sealed firing in use, practically prevent the frequent checking and cracking of the brick in the kilns and result in a better annealing of the brick.

The use of the waste heat from the kilns for heating the boilers is likewise a complete innovation. As indicated in the general view, the kilns have the ordinary short stacks for drafting the kilns in the usual way when the boilers are off, should such a circumstance arise. The arrangement with one boiler between two kilns, each boiler having a 90-foot stack has proven eminently satisfactory, however. Rust vertical water-tube boilers are used and the heat carries over from the kilns amply well to insure an efficient steaming of the boilers. The steam plant supplies steam for the engines driving the crusher, elevator, mixing pans, the several tools, oven blower engine and the electric light plant engine. Live steam is also used in the steam jets for the fire boxes.

The saving in fuel cost by the use of local coal for firing the kilns and with the same heat for the firing of the boilers also, is a very considerable item and contributes largely to the success of the plant. The plant has belt line shipping facilities and carries sufficient stock to give prompt delivery of material.

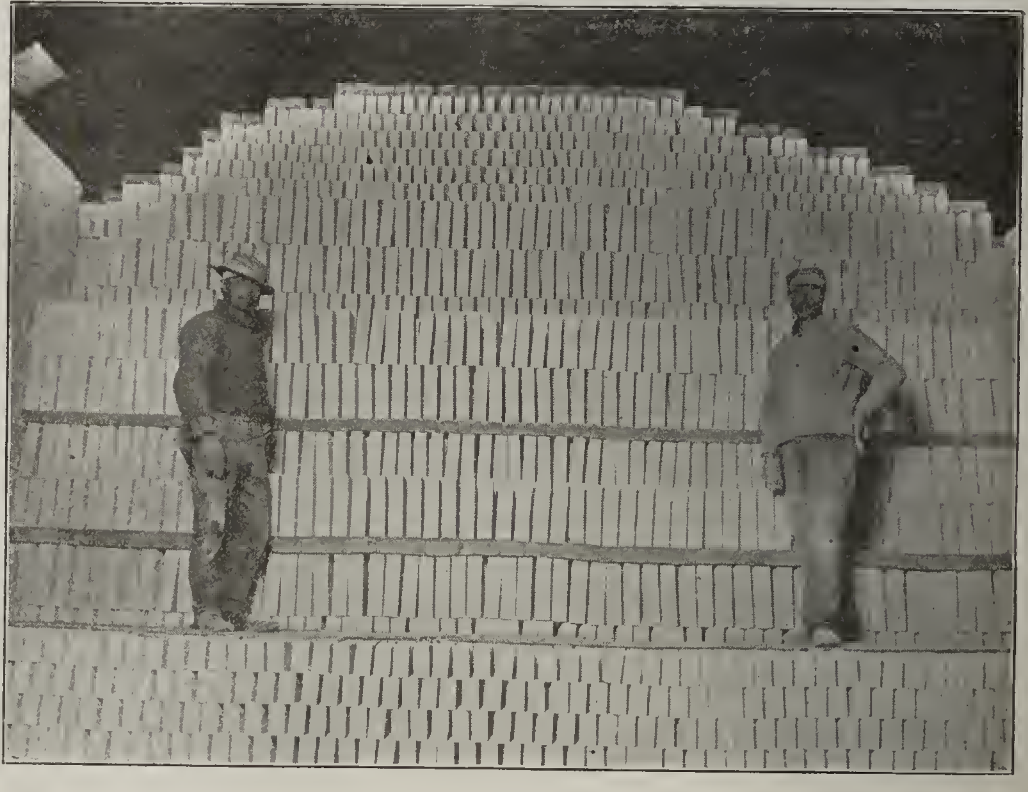


Fig 8. Kiln being set with Brick

RIDDING LIMESTONE SCUM FROM BRICK*

BY JOHN B. MILLAR, TORONTO, ONTARIO.

I confess it is more as a pupil than a teacher I come before you to open this discussion to-day.

You have all heard the remark that so and so has bitten off more than they can chew. Well, gentlemen, I did not bite this piece off, I believe the Secretary is responsible, and he has certainly carved more than I have been able thoroughly to masticate up to the present time.

If, however, I am able to start a line of thought, or to help in any way to bring out points which will enable this discussion to help some members present, so they may go home to make better and cleaner brick, I will feel satisfied.

In the first place, I would like to ask, is everyone perfectly satisfied that the name given to this troublesome discoloration is all "limestone scum." I am sorry my technical education will not enable me to settle it beyond a doubt.

It is a well-known fact, however, that lime in its various combinations is almost universally diffused throughout the earth's crust, with which we as clayworkers are interested. This varies in the materials used by us from 1 per cent, or a trifle over, to as high as almost 25 per cent. of lime, and all being used successfully in the manufacture of clay products.

Of course I am not speaking of fire clays. The process of manufacture varies in our different factories, depending on the line of goods we are turning out, but the preparation of the clay in any form demands that more or less water be mixed with the clay to bring it to the proper consistency for our special use.

The water used carries large quantities of lime also in some cases, varying considerably, of course, with location and the formation through which it passes.

Lime is very seldom entirely absent from either clay or water, and frequently they have a high percentage of it. With this mixture we are asked to deal to-day so that it may be dried and burned, coming from the kiln unspotted and forever after remaining the same.

The theory is correct, I believe, no matter what process we are using, that after the brick are formed, to in some way induce a gentle perspiration, so that the whole of the moisture contained in the brick is exuded, and this, in passing off, will carry with it many of the impurities that give us so much trouble.

If in any way this is interfered with, the heat dropping too low through carelessness on the part of some one, or temperature becoming too high, thus forming a hard crust through which it cannot pass except by causing a serious fracture, then we are laying the foundation for future troubles, which will appear either as soon as the kiln is opened, or later on after the brick are laid.

I may say that a dense brick subjected to heavy pressure is harder to dry safely than a brick which is made by a process not requiring this pressure.

Whether in dryers or kilns the moisture is being taken from the brick, the principal thing is to establish a circulation, and have it continuous and gradually increasing until the moisture is entirely gone.

We find that for drying in the kiln, brick carefully set, not too close, about 5-2, and after the kiln is filled and closed up, the dampers should be opened full if it is a down draft kiln we are operating; if an up draft kiln the plating must be well opened, and a gentle fire started where much moisture exists. I do not wish to be misunderstood. The same system of starting kilns is not used for all classes of brick or ware, but we must take into consideration the amount of moisture the ware in our kilns contains, and start our fires accordingly, wood being used by us for starting all kilns and also for drying all periodical kilns.

The reason why a gentle fire is started when much moisture exists is that no more steam may be started than the flues and stacks will carry off, and this will not be very much until the whole charge, as well as the flues is warmed up and circulation started. The effect of a hard fire on green brick or ware of any kind would be to create more steam than could be carried off by the flues and stacks, and this steam carrying quantities of the combined lime in some form that we noticed earlier in the paper, it is deposited on the ware beyond the point at which it was started, and we get whitewashed brick.

This is not all to my mind either, as if the brick are carefully examined from which the steam was so suddenly driven by the fierce fire, a crust will be noticed on the outside (where they are not cracked). This prevents much of the lime and salts from being carried off in the drying, and it is reserved for future trouble, possibly after the goods have been given some prominent place in the building, when after every rain they are brought to our notice more particularly, as the rain helps to carry out, little by little, what the moisture would have largely carried off if properly treated either in the dryer or kiln, wherever the greater part of the moisture is taken off.

In conclusion, let me say if the drying of our products is carefully attended to, whether done before coming to the kiln or after reaching the kiln, care being taken to provide a factor of safety in the construction of our dryers and kilns that the steam is carried as quickly as possible beyond the reach of doing damage and discharged into the outside atmosphere, in place of being driven into and carrying the impurities which it should carry off with it into other ware, a great part of our trouble with scum would be eliminated.

Good common sense is a very necessary thing for any man to have all through the drying and burning of a kiln of bricks, but I believe especially so up to the time the kiln is under full fire.

If there is any part I have not made clear, or in which I have been misunderstood or misspoken, I will be pleased to try and correct errors.

**Paper Presented at the Annual Convention of the Canadian Clay Products Manufacturers' Association in Brantford, January, 1909.*

The kilns of the C. P. Mayer Brick Co., at Bridgeville, Pa., 50,000 capacity building and paving brick were built by the Wilson Kiln & Dryer Co., West End Trust Bulding, Philadelphia, Pa.

A NEW ROOFING TILE

The manufacture of roofing tile has been of comparatively slow development in this country. This is probably due to the large investment required for a proper plant. Another reason is the difficulty of finding suitable raw material, such as will not warp and twist all out of shape in burning, etc.

While it is generally conceded that a well burned clay roofing tile is the most durable and most desirable roofing material, it is nevertheless a fact that roofing tiles are generally used only on buildings where cost is not a consideration. It is used by those who have the price and those who have not may use wood shingles, tin, prepared roofing, etc., all flimsey, cheap substitutes as compared to the substantial burnt clay tile. It has been hoped that some day a method of making a serviceable roofing tile at low cost might be found. We believe that this has been accomplished in what is know as the "Veen Tile." The extremely simple process of making this new style of roofing tile, should commend it to every plant (having a fair drain tile clay and using the stiff mud process) as a desirable and profitable product of manufacture.

Fig 1.

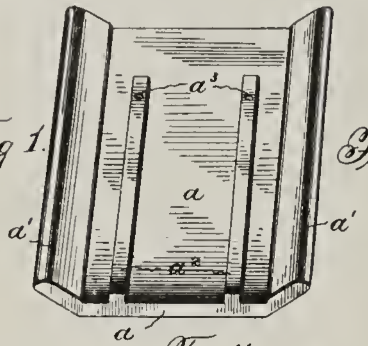


Fig 2.

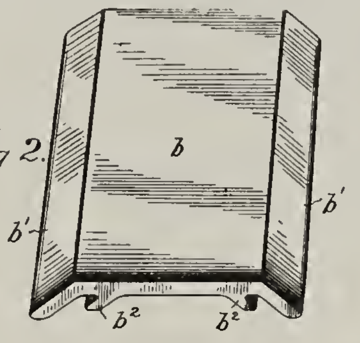


Fig. 3

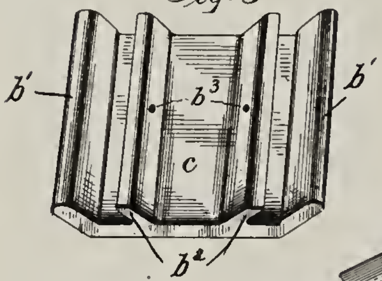


Fig. 4

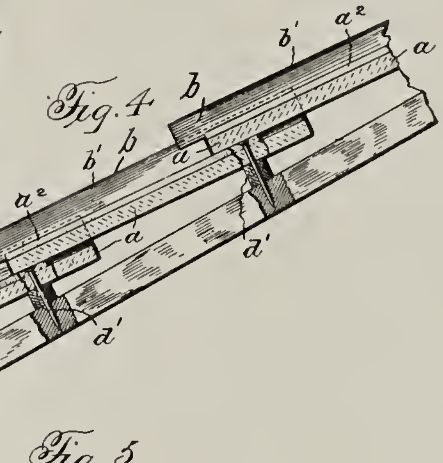


Fig. 5

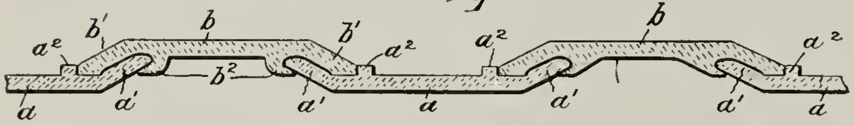
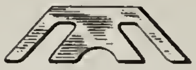


Fig. 6.



Mr. John Veen, the patentee, in presenting his tile, claims as follows:

1—Raw material.—Any clay or shale which will produce a good drain tile is suitable for the manufacture of these tile.

2—Low cost of Manufacture.—These tile as shown are run out in stream-like hollow block or drain tile. They are scored so that they may be readily broken apart after burning. This does away with use of plaster costs, special kilns, drying rocks and pallets and high priced help.

These tile can be made at a cost of $1.25 per square (100 sq. ft.).

3—Low cost of putting on roof.—As will be seen from cuts these tile so interlock that wind suction will not dislodge them. These tile are practically self-fastening. The first or lower course only is fastened to the roof, all following courses are held fast by interlock, the whole roof when completed being practically one solid piece, without use of either nails, wire or cement.

4—Factory requirements.—An auger or brick machine, fitted with Veen's tile dies, will do the work. The tile come from machine as shown in figure one, are cut lengthwise by wire set at mouth of die, the two pieces coming together after passing wire. They are then cut for length on cutting table, and set on end for drying and burning, same as drain tile or other hollow material. They are burned in ordinary down draught kilns. Any one who can burn a good drain tile can burn these tile.

Possibilities of Profit. A machine working up about 30 tons of clay per day, would turn out not less than 5,000 of these Hollow Tile (before splitting in two) per day. This day's run would equal approximately 50 squares of tile. At the price of wood shingles they would be worth at a low estimate $175.00. The cost of operation covering every expense would not exceed $60.00 for 30 ton capacity. Between these two extremes lies the manufacturers profit. Is your present product paying as well? Has your present product so great a future? I would like to go into this matter in greater detail, but feel that I may be trespassing on your time. Will be glad to hear from those interested."

Fig. 7.

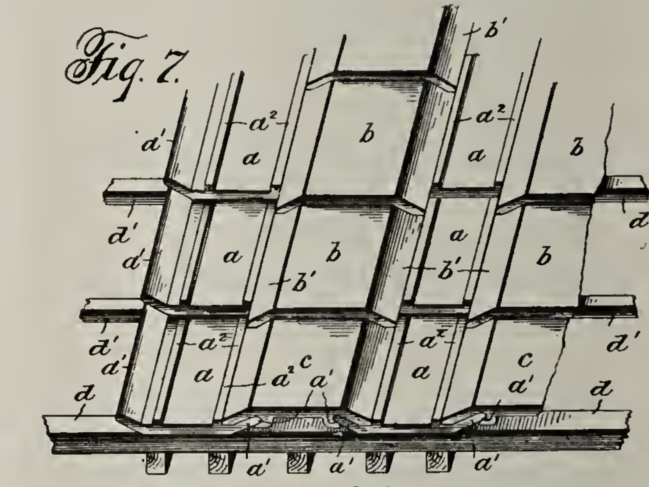
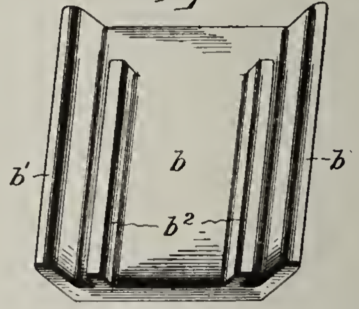


Fig. 8



We are giving space to this matter because we feel that it is one of the live prospects which make their appearance from time to time, and which we believe clay workers should have an opportunity of passing judgment on. We present it to our readers for investigation and refer those who wish to make further inquiry to the patentee, John Veen, Roanoke, Ills.

In the drawings, Figure 1 is a perspective view of one of the tiles of one set. Fig. 2 is a similar view of one of the tiles of the companion set. Fig. 3 is a similar view of one of the anchor-tiles of the second set, showing the same in inverted position. Fig. 4 is a longitudinal sectional view of a portion of a roof constructed with the two sets of tiles. Fig. 5 is a transverse sectional view of a portion of the roof. Fig. 6 is an end view of a modified form of an anchor-tile. Fig. 7 is a perspective view of a fragment of a roof constructed with the improved tiles; and Fig. 8 is a perspective view of one of the tiles of the second set, showing the same in inverted position.

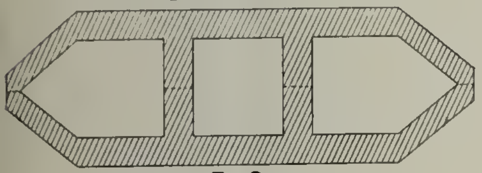


Fig 9

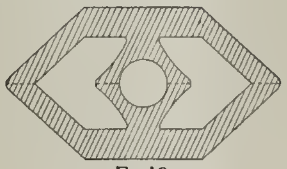


Fig 10

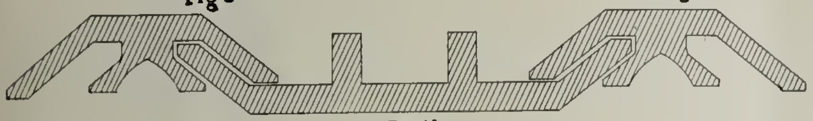


Fig 11

JUDGE ORDERS BURKE BROS. TO STOP USING BIG ENGINE AND WAGON ON ROADS

Ever since the establishment of Burke Brick Co.'s plant near the city of Ft. Smith, Ark., and the putting on of traction engines to draw their heavy laden strings of steel dump wagons to town, there has been more or less of a public protest that these heavy engines and heavily laden brick wagons were destructive of the roads. The Council at one time was on the point of forbidding them the use of the streets but it was argued that the great wide tires were rather a benefit than an injury to the roads and the matter went by default.

County Judge Harp has given the matter careful atttention and after mature deliberation has decided that the use of the traction engines must be discontinued or the roads will be ruined. He feels just as loyal to this big institution as any other citizen, he says, and regrets to put them to an inconvenience, but as the county judge the public highways are in his care and he is responsible for their protection, hence he addressed the following letter to the firm and will support the sentiment therein expressed by the authority with which he is clothed.

Burke Brick Co.
Gentlemen:

In view of the fact that your traction engines now in use on the roads are ruining them, and besides working an injustice to the public since it tends to obstruct, endanger and prevent the free use of the public highway, I will have to insist that you refrain from the further use of the engines on any of this county's roads.

You of course, are entitled to a reasonable use of the roads, but I am persuaded to believe that the use you are putting them to is not reasonable, and is unjust to others who are also entitled to a reasonable use of them but are not getting it on account of your monopolizing the right.

JESSE A. HARP,
County Judge.

THE OAKS PLANT BOUGHT FOR BONDHOLDERS

After considerable controversy, litigation and a general upheaval in Reading's Pa., financial circles, the Oaks brick plant, in which a fortune estimated between $500,000 to $1,000,000 was spent, in which the local investors were heavily involved, was sold April 8th, to a committee representing the United States Brick Company bondholders, for $50,600.

This plant, which has been before the public eye for some time, was offered at public sale in the morning at Oaks Station, by Edward D. Trexler, acting as trustee in bankruptcy for the Montello Brick Works, which built the plant. Mr. Trexler, who was accompanied by his counsel, H. F. Kantner, in calling the sale to order, announced the conditions, namely, that the plant would be sold to the highest bidder, but that the highest bid received is subject to the approval of Referee in Bankruptcy, S. E. Bertolet.

About 150 persons were in attendance, men high in the business world, from Philadelphia, Baltimore, Pittsburg, New York, Allentown and Reading, and a large number of junk dealers, who thought they would reap a harvest.

D. Thomas Kunkel, auctioneer, of Reading, was the cynosure of all eyes when he mounted the platform at 10 a. m., to cry the sale.

The equipment of the plant was first offered by items, after which the plant was offered as a whole, in order to ascertain which would net the highest figure for the creditors.

The bidding was quite lively, spirited and most harmonious. At the noon hour a luncheon was served to those in attendance. The bidding was then continued until 2:30 p. m., when the 380 separate lots of items were sold, the aggregate amounting to $42,361.80.

At 3 o'clock Auctioneer Kunkel announced that, by order of Edward D. Trexler, the trustee in bankruptcy, the plant would be sold as a whole. A number of pools were formed between a large number of financiers, machinemen and junk dealers.

The United States bondholders were represented by Messrs. Lambert A. Rehr, Howard L. Boas, A. J. Brumbach, J. G. Mohn, W. W. Light and J. B. Fricker.

The bidding on the property as a whole advanced from $43,000 to $50,000, by bids ranging from $5,000 to $1,000. When the $50,000 mark was reached the bidders fell off somewhat and bids of $100 each were received until the property was finally knocked off to the committee representing the bondholders for $50,600, subject to the approval of the sale by Referee in Bankruptcy, Samuel E. Bertolet.

WHO MAKES WHAT

The above is the name of a book, a reference for buyers, a directory of manufacturers, a directory of products, a directory of foreign merchants, a directory of wholesale hardware merchants and jobbers and a directory of exporting houses. The price of the book is $1. It is published by Daniel T. Mallett, 253 Broadway, New York, who is the publisher of the Hardware Dealers Magazine, the greatest journal devoted to that trade that is printed in America.

BRICK BURNING WITH CRUDE OIL IN UP-DRAFT KILNS

In localities where brick burning is carried on with wood exclusively, many a wish has been expressed by brickmakers that mother earth would be kind enough to open her bowels and deliver the black fluid. In Texas and Oklahoma where wood is abundant, brickmakers are more fortunate in also having oil as fuel to burn their brick. To answer several inquiries received I am writing this article on

OIL AS FUEL FOR BURNING BRICK.

The watersmoking is carried on as usual with wood, for it would not do to heat up the furnaces sufficient to ignite the oil; the heat so generated would ruin a kiln of brick. The mechanical water would be boiled out instead of evaporated.

Rules to observe when starting to heat up a kiln of brick with oil:

First, be sure that all the burners are clean and open.

Second, have all the ashes left from watersmoking cleaned out of the fireholes, or you will blow the ashes all over your brick.

Third, have a steam jet attached to oil-system to jet any water that may be in the bottom. Nearly all fuel oil shows water in the bottom after resting a few days after emptying the tank cars, the oil floating on top.

Fourth, before starting with the oil, arrange the platting on top of the kiln, so that you have sufficient openings for draft for smoke to escape, so your kiln, if not perfectly dry in every place, may get sooted. The kiln will smoke in spite of all attention until the fires are getting hot enough to burn up the smoke, but by regulating the steam or air and turning on, not too much oil, a good deal of smoke can be prevented.

Fifth, if gravity burners are used, see that the tank is kept nearly full of oil all times, and if pressure burners are used, watch your pressure gauge at the oil pump and also the steam gauge at the boiler. Be careful to have dry steam, or you will have trouble with the oil getting mixed with condensed steam, which is water. By carrying only about one gauge of water in your boiler you will have dry steam.

DRAFT OF A KILN BURNING WITH OIL.

You will have more draft with oil than with coal, for the reason that you have a forced draft by the application of steam pressure, and when the heat is showing on top you must close the platting at those places or the heat will escape too fast on account of the strong forced draft below. When the kiln settles, you will get better results by covering the kiln with sheet-irons, all except about 2 ft. on the sides and ends. This will enable you to spread the heat to the sides and ends of the kiln, burning the brick uniform in all parts of the kiln. Or you can cover the kiln with clay to hold the heat, but you must watch the arches below, for they might get too hot and melt the brick.

QUALITY OF THE OIL.

In my experience crude oil is better than residium oil, because the latter has many heat-units removed in the form of kerosene, gasoline and other by-products, and in cold weather it must be heated with steam coils; it gets much thicker than crude oil by the removal of the by-products.

WHICH IS BETTER STEAM, OR AIR FOR SPRAYING THE OIL?

Air is better, not so noisy and no chance of water getting mixed with the oil as with steam.

Steam is safer, for if something should go wrong with the air compresser, you are in a bad fix, unless you have an extra one for an emergency. I remember a case where the air compresser broke down when we had several kilns on fire and we could not do a thing but keep up the fires with wood until the compresser was repaired. It took a whole night. Of course a steam pipe might burst, but it does not take so long to take the piece out and put in another one. It's not so bad as when the air compresser breaks down, unless the boiler explodes, then it's real bad.

RESULTS FROM OIL.

You can burn to a more uniform color with oil than with any other kind of fuel, and you save a lot of hard labor, such as clinkering and hauling cinders.

You can pay more attention to the kiln, instead of shoveling coal, cleaning fires and wheeling away the cinders, and you also save time, as the heat is more steady than with any other fuel, gas not excepted.

KIND OF KILNS FOR OIL.

Any kind of kiln is suitable to burn with oil. All you have to do is to brick up the fireholes and leave an opening about 4x6 inches around the burners, supplying air for combustion.

HOW PIPES FOR BURNING OIL SHOULD BE LAID.

If you are sure that you can get a supply of oil for years to come, you better have the steam and oil pipes overhead, then when one should leak you can notice it at once and repair it, while when the pipes are laid underground and covered up you cannot see any defects and much steam and many barrels of oil may be lost. You know pipes laid underground will corrode in time.

OIL PUMPS.

Any kind of a pump is liable to get out of order and stop. Sometimes they stop sudden, like the human heart, the most perfect pump in the world. Therefore it's a good idea to have two pumps, one to run when the other one stops.

OIL TANKS.

If only one pump is used, then the tank should be ample large enough to hold enough oil to run the kiln for several hours, in case the pump should stop, and two tanks would be better than one. Accidents will happen and a stitch in time saves nine.

FEDERAL PLANT TURNED OVER BY BUILDERS

The brick plant at the federal prison, at Leavenworth, Kansas, was turned over for operation March 30th by the builders. The new plant when run at its capacity will be capable of turning out 60,000 brick per day. The brick first made will be used to supply the needs around the prison for building and paving.

The big Russell engine which was installed to furnish power for the brick plant was passed on as regulated and ready to take up the work of furnishing power for one of the largest plants of its kind in the West. The installation of the engine has required Mr. Bell, the company's expert, to spend a greater part of his time since December working at the plant.

WESTERN ONTARIO CLAYWORKERS MEETING

The fifth annual convention of the Western Ontario Clayworkers' Association met in the Town Hall, Blenheim, on Friday, Feb. 26.

About twenty-five members and guests were assembled when, at 10:30 a. m., the meeting was called to order by Mr. Adolphus Wehlann. In his opening address President Wehlann reviewed the work of the association during the past year; discussed the conditions of the clayworking industry in Western Ontario, and gave a warm welcome to all present. He also expressed his appreciation of the excellent work done by the officers during the year. He then introduced Councillor Mayo of Blenheim.

Councillor Mayo had been appointed to extend a welcome on behalf of the Municipal Council to the association. His welcome was a most cordial one, ending up with an offer to hand over "the keys of the city," after locking up the police.

Mr. Wm. McCredie, of Lyons, Ont., replied in a well-chosen, spicy address, full of practical suggestions. In addition to thanking Councillor Mayo, he emphasized the fact that the association was educational and was worthy of encouragement.

OFFCERS FOR COMING YEAR

The election of officers resulted as follows

Honorary President, Adolphus Wehlann, Rodney.
President, John Miner, Kingsville.
First Vice-President, A. W. Hill, Essex.
Second Vice-President, Jno. Wardell, Blenheim.
Secretary-Treasurer, Alfred Wehlann.
Executive Committee, David Martin, Thamesville; David McMillan, West Lorne; A. Wehlann, Rodney; Jas Cornhill, Chatham; J. H. Sipperell, Wilkesport.

TWO DAYS MEETING NEXT YEAR

After a considerable discussion as to the advisability of a two-day meeting, and the place wherein to hold it, it was decided to hold a two-days' meeting in Kingsville, in February, 1910, with a banquet.

MEMBERS PRESENT

Registration and enrollment followed, and the following gentlemen registered:

Jno. Wardell, Blenheim.
J. H. Willson, Parkhill.
David Martin, Thamesville.
W. McCreedie, Lyons.
A. W. Hill, Essex.
B. E. Bechtell, Waterloo.
William Gardiner, Blenheim.
John T. Miner, Kingsville.
D. L. McMillan, West Lorne.
Harry de Joannis, Waterloo.
J. H. Cornhill, Chatham.
John Hitch, Ridgetown.
A. Smith & Son, Cowal.
B. F. Davenport, Orwell.
B. Broadwell, Kingsville.
Jules Robinette, Sandwich.
Adolph Wehlann, Rodney.
J. R. McCormick, Kingscourt.
N. Currie, Glencoe.
Al. Wehlann, Cairo.

The afternoon session was called to order at 1:30 p. m. The treasurer's report showed a cash balance on hand of $8.85. Then other general business was disposed of.

ECONOMIC BURNING OF CLAY PRODUCTS

Mr. B. E. Bechtel, of Bechtel's, Limited, Waterloo, Ont., was then called and read a paper on "Economical Handling of Clay Products." Mr. Bechtel's talk was along practical lines, showing how the advance and improvement in clayworking machinery design had enabled the brick or tile manufacturer to greatly increase the production of his plant, and thus to increase the profits from the business.

THE VALUE OF TRADE JOURNAL TO CLAYWORKER

Harry de Joannis, also of the Bechtel firm, followed with an address on "The Clayworker and the Trade Journal," setting forth the benefits to those in the clayworking business of reading papers giving practical information to the trade. Harry, ever a popular fellow at conventions, intermingled many witticisms and dwelt upon the advantages of advertising.

TECHNICAL EDUCATION IN CLAYWORKING INDUSTRY

Mr. W. McCredie was invited to explain the agitation being carried on by the Canadian Clay Products Association to secure the establishment of a ceramic school in Ontario. Mr. McCredie, who is Chairman of the Technical Education Committee, was most convincing in his explanation of the need of a school where the chemistry and practical science of clayworking could be studied. Mr. Robinette, of Sandwich, Ont., endorsed Mr. McCredie's views.

Mr. Joannis then moved, seconded by Mr. McCredie, that "The Western Ontario Brickmakers' Association, assembled in fifth annual convention at Blenheim, Ont., on the 26th day of February, 1909, herewith make urgent appeal to the Provincial Government of Ontario to exercise its legislative function of appropriation on behalf of the clayworkers of the Province of Ontario, by setting aside the sum of $10,000 for the immediate establishment of a technical clayworking school in Ontario. The industry, as has already been reported to your Government, is greatly in need of the assistance of such a school, conducted along similar lines to those on which the clayworking school in the United States, at Columbus, Ohio; Champaign, Ill.; New Brunswick, N. J., and Ames, Iowa, are conducted.

Other members then addressed the meeting, and upon motion of the Secretary and J Miner, a hearty vote of thanks was tendered Councillor Mayo and the Blenheim Council and those who had entertained, which was responded to by a hearty clapping of hands.

Messrs. Currie and Martin moved adjournment, after tendering a vote of thanks to the officers of 1908.—*Canadian Manufacturer.*

HERE'S A GOOD SUGGESTION

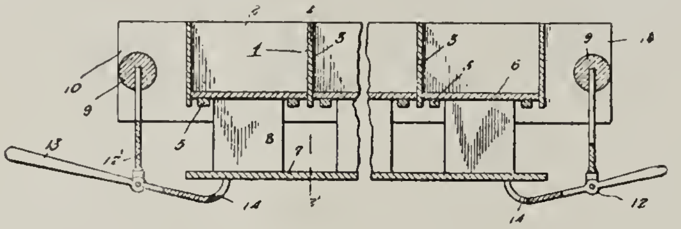
Mr. Hedges, president of the Rich Hill (Mo.) Brick and Tile Co., will donate to the city of Rich Hill 1,000 feet of drain tile if the city will put it in on the streets. This offer is made that the benefits of tile drainage along streets and roadways may be demonstrated. A good place to lay the tile would be along the east side and northeast side of Central Park. 1,000 feet of tile would reach a considerable distance around Central Park and it would have a sufficient outlet to fully test the merits of road tiling.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

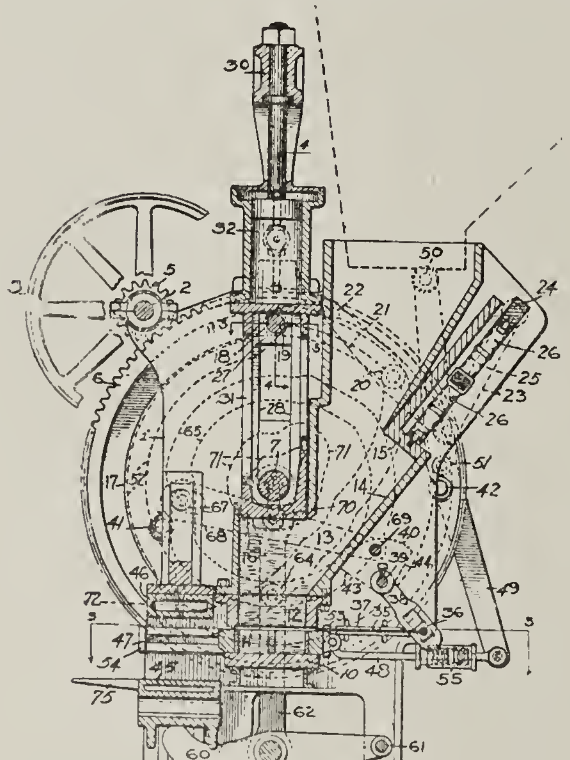
910,621. Brick-Mold. Cyrus S. Wert, Kendallville, Ind. Filed Aug. 6, 1908. Serial No. 447,300.

Claim—A mold of the class described comprising an outer section formed with a plurality of mold compartments, an inner movable section provided with plates to fit in the respective compartments of the outer section and adapted to form the bottoms of the molds, the inner section also comprising a flat base plate supported beneath said plates, means for supporting the upper plates of the inner section at the bottoms of the mold compartments, cross rods at the ends of the outer section, supports extending from the cross rods, and operating levers pivoted to the supports in position to have their inner portions bear upon the base plate of the inner section.



910,724. Brick Molding and Pressing Machine. Otto M. Reif, Allegheny, Pa. Filed March 28, 1907. Serial No. 365,036.

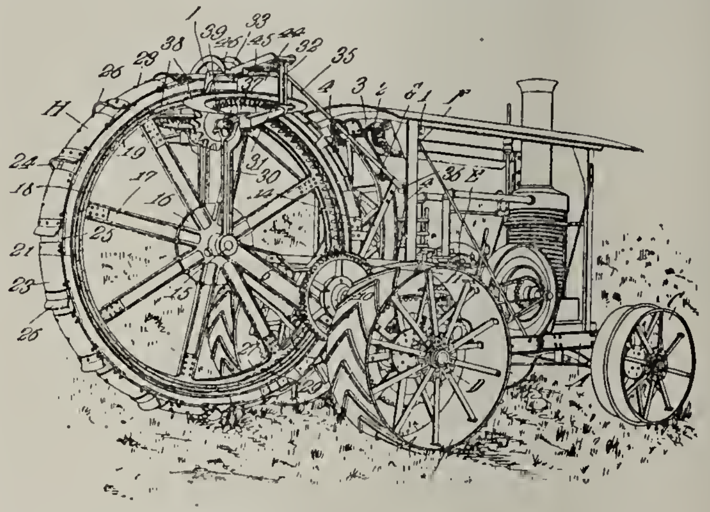
In a block molding and pressing machine, the combination of a hopper, a movable mold arranged to receive material from the hopper, a molding plunger arranged to force material into the mold, a knife reciprocating between the hopper and mold, a re-pressing plunger, mechanism for actuating said plungers and said knife and for moving the mold from the molding plunger to the re-pressing plunger, said mechanism including cams formed upon a single moving body.



In a block molding and pressing machine, the combination of a movable open bottom mold, a molding table and plunger, a re-pressing table and plunger, mechanism for moving the mold from the molding plunger and table to the re-pressing plunger and table, and mechanism for operating the re-pressing plunger and table so arranged as to lower said table and plunger after the pressing operating to eject the block.

910,552. Ditching-Machine. Torbjorn Linga, Thor, Iowa. Filed Oct. 12, 1908. Serial No. 457,378.

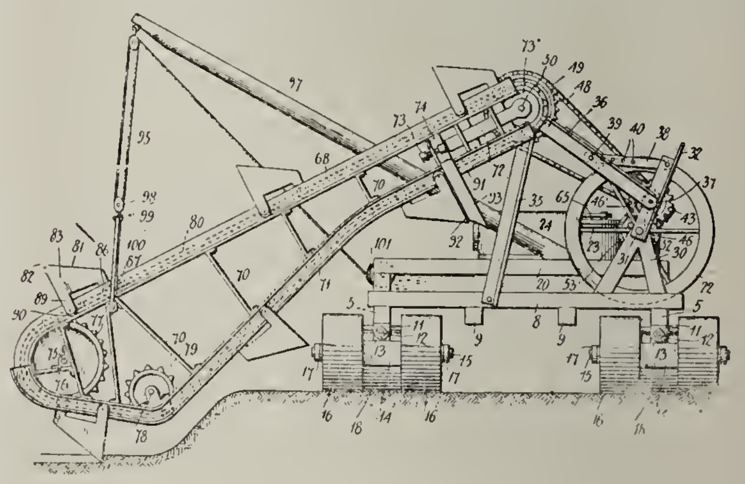
A ditching machine comprising a motor-propelled structure, a revoluble digging wheel mounted to swing vertically relative thereto, a conveyer at one side of and movable vertically with the wheel, and means for maintaining the conveyer in a predetermined relation to the horizontal.



In a ditching machine a revoluble digging wheel, a support therefor, means for actuating the wheel, a revoluble conveyer table for receiving material from the wheel, and means actuated by the wheel for operating the table.

910,864. Excavating-Machine. Charles H. Ruth, Brawley, Cal. Filed Feb. 14, 1908. Serial No. 415,970.

A machine of the class described comprising a frame arranged for travel, an excavating conveyer supported from said frame, said conveyer comprising an endless chain of buckets, means for holding said buckets in operative position throughout a portion of the length of their upward travel, said buckets being arranged to tilt automatically after passing such means, a trip arm carried by each bucket, and an element arranged in the path of said arm for returning the buckets successively to normal position.



911,547. Process for Hardening Calcareous Artificial-Stone Substances by Means of Carbonic Acid. Erich Schwanenberg and Albert Rinne, Hanover, Germany. Germany. Filed Dec. 4, 1906. Serial No. 346,309.

The process of hardening artificial stone substances, containing hydrate of lime, by means of comparatively dry carbonic acid or gases containing carbonic acid, which consists in alternately treating said substances with said carbonic acid and heating the same to remove the water formed by said treatment.

PACIFIC COAST NEWS ITEMS

According to present indications there is every probability that the price of brick in San Francisco and vicinity will reach a still higher figure within the next two or three months. The price has been steadily advancing from the low figures of last summer, when common brick was sold freely at $7 per thousand, to $9.50 per thousand and some firms are asking even more than this, claiming to have a superior quality. Up to the present time the advance in price may be said to have been the result of natural conditions for at the low figure it was impossible for plants to operate at a profit, except in a few instances, and this figure was named merely as an inducement to get rid of the large stocks on hand and to get needed money. Now more normal conditions are ruling again, building operations are being resumed on a larger scale, stocks have been reduced to a reasonable amount and there is less of a pressing need for ready money. These have all been influences working to the advantage of the brick making industry. However, a further increase in the price of brick would be considered the result of something a little removed from the normal, and such is now the case, in a measure of the local brick market, although its effect has not been felt, as yet, in the matter of price. It is now positively known that an agreement has been made between the principal brick manufacturers in this section of the state whereby the output is to be limited to the actual needs of the market and the price kept at a figure that will be satisfactory to all. The Cartwright anti-trust law was recently amended permitting of combinations in certain ways and advantage has been taken of this amendment by the brick men in drawing up their agreement. Skilled attorneys have had this matter in charge and it is said that the agreement made is in such a form that the law, as amended is not violated in any way. To brick manufacturers and the general public as well, the important item in the combination that has been formed, is the fact that the bulk of the output of the plants near San Francisco Bay, is now in the complete control of Gray Bros., and it is now to them that attention will be turned as to the matter of price.

Building contracts let in San Francisco during the month of February, show that a large gain over those of January, and the figures are very encouraging. The statistics show that San Francisco was third in the list of American cities, with a record of $2,207,956. From February 20th to March 20th, fine, clear weather has ruled in San Francisco, and building operations have been heavier in proportion to the permits let than is usually the case. A large part of the expenditure is for brick and it is to be noted that there is a falling off in the use of cement except for foundations. The principal work at the present time is still on store and office buildings in the new retail section, but this demand is now about supplied and more attention will be paid from now on to the erection of apartment houses and warerooms. The call for common brick seems to be steadily on the increase, due largely to the fact that there is now an immense amount of work in warehouses and manufacturing plants going on in the waterfront and wholesale district.

The demolishing of the old City Hall is now under way and contracts have just been let for tearing down a large part of the ruined pile. The immense amount of brick that is taken from the ruins is cleaned and placed on the market by the contractors who have charge of the work. All that is broken and not available for use again is crushed finer and is used in cement work in the place of rock. An appropriation has been made for the erection of the Hall of Justice on Kearny Street, and as the lot has been cleared, it is expected that it will not be long before actual construction work can be commenced. Part of the old City Hall is to be repaired and it is uncertain when a new structure will be erected on this site.

The plant of the Golden Gate Brick Company is now working at its full capacity and Manager C. F. Pratt states that the output has been disposed of for several months in advance. The sandstone brick manufactured by this concern is becoming a favorite here and besides being used for exterior facing purposes is being largely used for fireplaces and mantels.

George Gray, manager of the San Francisco Brick Company, states that his plant is also operating on full time and states that several other plants have also resumed operations now that the weather has cleared again.

The Marysville Sand, Cement & Brick Co., of Marysville, Cal., has made application to the city council at that place for the lease of a number of lots on the outside of the levee east of town. If the lease is granted it has offered to raise the height of the levee at that place several feet, a much needed improvemnt. This concern has been devoting its entire attention up to the present time to the manufacture of brick, but will now take up the manufacture of tiling and cement shingles. A branch will also be established at Chico, Cal., and some manufacturing will be done there.

The San Diego Cement Pipe Company, of Escondido, Cal., will shortly establish a factory at that place for the manufacture of cement pipe. Vitrified pipe may also be manufactured as a first class clay deposit is in the vicinity.

The Hubbard & Chamberlain Co., of Los Angeles, Cal., which recently took over the properties of the Garvanza Brick Company of that place, has been incorporated to better transact business. The capital stock is placed at $25,000 and is subscribed by R. B. Hubbard, J. J. and Laura M. Chamberlain.

The Western Cement Brick Company has been incorporated at Los Angeles by J. H. Clement, W. B. Forden, S. F. Johnson, W. A. and C. A. Stutsman. The capital stock is placed at $250,000.

The Kingstone Silicate Brick & Building Co. has been incorporated in Los Angeles by H. J. Robinson, C. N. Nicholson, M. McKeague, E. J. Donnelly and C. Strong. The capital stock is $200,000.

The Pioneer Porcelain Works has been incorporated in San Francisco with a capital stock of $25,000 by Henry Tobaben, W. W. Stocker and J. C. Jens.

The Centralia Floral Pottery Company has been formed at Centralia, Wash., by A. Brockwell, Mary L. and Wm. M. Christensen.

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

The most valuable feature of success is the struggle that precedes it.

Did you send in your subscription last month? If not, do it to-day.

Maxim—Live to-day. Yesterday is dead. To-morrow may never be.

The point that we want to fasten down with rivets is this: As your advertising is, so is your business.

The man who always boasts that he always says just what he thinks may often be only a third-class liar.

An idle dollar is a dollar that is doing no person any good. It should at once be given employment. Do you know of a better or more profitable place to employ it than to send it to the Clay Record for a year's subscription, to the only semi-monthly clay journal that is printed in America?

The noted Fitzpatrick says:—"Fatal collapses of buildings have grown altogether too common." A radical reform is imperative and is in progress. A year ago, one of our building trade journals exclaimed: "The gray of our concrete structures is already too much stained with blood. Shall we allow that stain to spread and grow still darker?"

"A really fireproof building is not only possible, but really inexpensive and easy to accomplish. All the steel work and structural portions should be protected from rust with cement, and then amply protected from fire, by hollow fireproofing tile. The stairways and elevators should be enclosed, and wooden and other combustible finish should be eschewed."

CONVICT LEASE SYSTEM ENDS IN GEORGIA

The abolition of the convict lease system in Georgia became effective April 1st, and the 2,500 unfortunates were transferred from the lessees to the custody of the State.

The end of the lease system was hailed with joy by the convicts and in many camps they broke into prayer and song as they were transferred to the State authorities. At the Durham mines, where evidence taken by the investigating committee of the Legislature showed that great cruelty had been practiced, the 300 convicts marched out singing "Praise God from whom all blessings flow." Similar scenes occurred when the convicts left the turpentine camps. The Chattahoochee Brick Company, near Atlanta, turned over 300 convicts, and these celebrated by falling on their knees and thanking God.

Georgia had been leasing convicts for forty years. The system was abolished because of the graft and cruelty revealed by the investigation set on foot by Gov. Hoke Smith. Hereafter able bodied convicts will be worked on the public roads of the State and a great system of highways is to be developed.

Several of the largest fortunes in Georgia have been built up through the convict lease system.

TERRA COTTA COMBINE ELECTION WILL STAND

Albert Bond, representing the minority stockholders of the Atlantic Terra Cotta Company, some time ago petitioned Attorney General E. R. O'Malley, of the state of New York, at Albany, to bring suit against the Atlantic Terra Cotta Company to declare the recent election of officers and directors void.

The petition has been denied by the attorney general. At the election, held at the New York office of the company, January 21st, William H. Powell, the vice-president, was elected president, in the place of DeFort Grant, who had held that position since the combine of the several terra cotta plants in the vicinity was formed.

Since that time an effort has been made to break the combine, but without success. The denial is a victory for the new officers.

A number of changes have taken place since these officers have been in charge and it is said that the plants are running along as usual. Mr. Powell was much pleased with the way things were going. It is declared that the outlook is bright for a busy season.

OBITUARY

Louis Smith, for many years a well-known brick manufacturer at Harlan, Iowa, died at his home of tuberculosis.

George A. Stanbery, the general manager of the American Encaustic Tile Co., Zanesville, Ohio, died very suddenly at his home in that city. He was 61 years of age.

Dr. H. A. Winters is dead at Chattanooga, Tenn. He was the owner of the Chattanooga Pressed Brick Co. Works and left documents for the widow to continue the business.

Joseph J. Kulage retired brick manufacturer of St. Louis, Mo., and Hobert, Ind., died at his residence, 1435 E. College Ave., St. Louis, Mo. He was 57 years of age, and was born in Germany.

Antoine Tousignant, for the past 27 years a brick manufacturer at Sandwich, Ontario, across the river from Detroit, Mich., died at his late home of a complication of ailments. He was 73 years of age and survived by seven children.

Capt. John Paye, for many years a prominent brick manufacturer of Fishkill, N. Y., died at his home in Byrnesville from kidney disease. He was 75 years of age and leaves a widow and six children. The firm name was Paye & Shackett. The brickyard was given to his daughter, Mrs. Ida Rodriguez.

FIRE! FIRE!! FIRE!!!

Fire gutted the Ohio Tile Co.'s plant at Hamilton, Ohio. The loss is estimated at $5,000, fully covered by insurance. It is supposed that incendiaries were responsible for the fire.

Fire damaged the plant of the American Clay Products Co., 25th Ave. and Marshall St., Minneapolis, Minn., the origin of which is unknown. The loss is estimated at $6,000, partly insured.

Fire originating from spontaneous combustion in an oil tank completely destroyed the factory of the Colorada Brequette Mfg. Co., at Grand Junction, Colo. The loss is $10,000, partly covered by insurance.

The Campville (Fla.) Brick Co.'s plant was totally destroyed by fire. The loss is estimated at $10,000, with no insurance. J. A. Maultsby is the principal stockholder and manager of the concern and will rebuild at once, doubling the old capacity. He expects to have it in operation in 60 days.

MINNEAPOLIS UNIONS WON'T BAR WORK-HOUSE BRICK

Union labor will make no further objection to the use of "workhouse" brick in city work, according to information received by Superintendent McDonald of the Minneapolis, Minn., workhouse from the bricklayers' union. Early in the winter the union men, notably the bricklayers, expressed themselves as strongly opposed to the use of brick manufactured by the inmates of the workhouse, and the fact that the city authorities contemplated utilizing this brick on city work called forth a storm of protest from union circles.

The bricklayers, however, decided that there was no harm in working the brick into the sewers and other kinds of public works, and the opposition of the union men has been withdrawn.

ACCIDENTS, DAMAGES AND LOSSES

John Connelly of Peekskill, N. Y., was painfully injured while at work on a shed over a brick machine at the Rose Brick Co.'s plant at Roseton. He fell, striking head and shoulders onto the brick machine shaft.

S. A. Slusser, an erecting engineer for the American Clay Machinery Co., while superintending the erecting of the brick machinery at the Federal Prison, Leavenworth, Kans., was badly injured by a car of green brick falling on him.

A petition in bankruptcy has been filed by the creditors of the Colorado Chemical Co., Kansas City, Mo. A. N. Allen of Chanute was the secretary-treasurer. The company manufactured a product known as "Red Cross Denver Mud."

The trustee for the W. L. Davis estate, New Britain, Conn., has brought suit against the Stiles Brick Co., to recover $25,000 damages in a suit for preference.

The five year old daughter of Walter Brewer, superintendent of the Williamson (Ind.) Tile Co., was badly burned, so that her flesh was literally cooked.

Thomas Short caught his shirt sleeve in a cog wheel at the plant of the Frankfort Brick Works, Bridge and Ditman Sts., Philadelphia, Pa., and lost his arm to the elbow, which was nearly wrenched from its socket.

The minority stockholders of the Granite Brick Co., Burlington, Iowa, have filed a suit asking for an accounting of the sales of the company made to the Burlington Construction Co., which is claimed to be owned by the majority stockholders of the brick company.

LILLIBRIDGE SUPERINTENDENT OF TILE WORKS

At a meeting of the officials of the American Encaustic Tiling Co., held at Zanesville, O., Harry D. Lillibridge was chosen as general superintendent of the company's big plant on upper Linden avenue, to succeed the late George A. Stanbery.

Mr. Lillibridge is a Zanesville young man, born and bred, and his numerous friends will be pleased to learn of his advancement to the responsible position at the head of Zanesville's largest manufacturing institution. On the other hand, the company is to be congratulated upon being able to find a man as well qualified in every way as Mr. Lillibridge is, to fill the position.

Mr. Lillibridge entered the employ of the A. E. Tiling Co. as a draughtsman 19 years ago. He soon showed marked signs of unusual business ability as well as a tendency to grasp the mechanical knowledge necessary for his advancement. He went up steadily until several years ago he was made assistant to Superintendent Stanbery. This position he filled in a very creditable manner and in a way was allowed to prepare himself for just such a crisis as the death of Mr. Stanbery brought about.

The heads of the different departments of the mammoth works were called together by the directors of the company and apprised of their making Mr. Lillibridge superintendent. The officials let it be known that they had every confidence in Mr. Lillibridge's ability to continue the successful operation of the plant, and asked the cooperation of every one toward that end.

THE HUDSON RIVER BRICK MARKET

At the meeting of the Hudson River Brick Manufacturers' Association held at Newburgh, N. Y., a vote was taken on a proposition that the yards should start work on Monday, April 26. The vote was favorable, every man present favoring the proposition. Then there came a halt. The rules of the association provide that an action of this kind shall not be taken unless it is sanctioned by 85 per cent. of the members. That knocked out the motion, for less than 40 per cent. of the memberhsip had voted. The fixing of a date for the brickyards to start up was left for decision at another meeting which will probably be held at Newburgh this week. Adjournment was taken subject to the call of the chairman.

Another matter discussed to some extent was the question of labor. There is but little labor employed on the yards, comparatively, until the time has almost arrived to start work for the season. It was thought it might be necessary to pay a little more for labor this season than was paid last year, but action was not taken on the question.

There are now about 100,000,000 brick on the yards owned by members of the association, as against 2,000,000 ordinarily at the beginning of a season. It is the desire of the members not to start up too early, for fear of forcing down the prices, which now range from $7 to $7.50 a thousand. It can be said positively that the outlook for the coming season is good, both for labor and for Hudson River manufacturers.

With the entrance of Spring the demand for brick has been greatly accelerated. Forty-two cargoes of Hudson Rivers were distributed from the wholesale market the first week in March. The second week the weather interfered to some extent, but the outgo has been large on the good working days. Brooklyn is taking a large amount of material this Spring, but the shipments are being very evenly divided among the borough. So far as brick is concerned, the building season has opened early and briskly—if after a winter of remarkable mildness, during the whole of which brick building was going ahead, it can be said that there has been an "opening." The first of March the top price for Hudson River was $7, and the week later quotations indicated a good rise, in the meantime clearly defining the boundary line between winter and spring. As brick leads the way in building operations, the activity in this department gives much encouragement to other trades.

The market quotations for cargo lots in New York March 1st, was $7.25 to $7.50 per thousand.

The Catskill Mail says: "Joseph De Lauriens, the new foreman at the Goldein and Son's brickyard has established a new record for brick loading. In sixteen hours Mr. Goldein loaded on the barge John King, 340,000 brick, an average of nearly 21,000 per hour. The load goes to parties in New York City."

NEW ENGLAND STEAM BRICK CO.'S WORKS RE-OPENED

Three hundred and seventy-five men resumed work after three months of inactivity, when the factory of the New England Steam Brick Company at Bristol, R. I., opened. The management states that there are enough orders in sight to keep the plant working at full time for several months, and indications point to a maintenance of regular operations.

SEATTLE INDUSTRY TO EXPEND $300,000

Plans which have been under consideration for many months by the Denny-Renton Clay & Coal Company, Seattle, Wash., calling for extensions and improvements to cost $300,000 have been approved, and work is now proceeding at the Renton paving brick plant with the excavation for the erection of five additional square large-type, down-draft kilns.

These kilns are similar to those erected by the company last summer, and are the largest down-draft kilns in the United States. Each measures 150 feet by 20 feet inside and holds 300,000 paving brick, or a total additional holding capacity of 1,500,000 brick. This is equivalent to an additional daily output of 50,000 brick. These five kilns will cost $100,000. To meet this kiln capacity the factory will be enlarged and new machinery installed at a cost of $50,000.

The constructors must finish this work by July 1st, enabling the firm to take care of an unusually heavy demand for vitrified brick this year.

In making this improvement, the company thought it wise to build for the future. It has been found that the delivery period, in which work can be successfully prosecuted each year, is short, and all work is pushed during that time. Winters such as the last one are too severe to operate continuously. These difficulties have been given due consideration, and it was decided to build on such an elaborate scale as to meet any such emergencies.

"With only forty-seven millions paving brick now laid in the state of Washington," said the general manager, "we will have an annual factory output of forty-five million pavers, and thus be prepared to cope with every possible demand upon us for years to come. Our faith in the continued prosperity of Seattle and the Northwest is good and sufficient reason to warrant this expenditure."

The other improvements are at present under way at Taylor. This includes the erection of a large three-story fireproof factory, built entirely of clay materials. The size is 130 feet by 250 feet, and will add 100,000 square feet of floor space. This factory will be devoted to the manufacture of all kinds of hollow ware and sewer pipe. All sizes of sewer pipe up to 36 inches in diameter will be manufactured there.

The coal mines at Taylor are in process of development to supply the entire factory consumption of coal. These Taylor improvements will cost $150,000.

VISIT THE ILLINOIS WHILE IN CHICAGO

"The Traveling Salesman" will commence a limited engagement at the Illinois Theatre, Chicago, Monday, April 12, after a run of nine months in New York City.

"The Traveling Salesman" is from the pen of James Forbes, author of "The Chorus Lady," and is a worthy successor of that universally successful play.

"The Traveling Salesman" will be presented at the Illinois with the original New York company in its entirety. The prices will be 50c to $1.50. Performances every night including Sundays: matinees Wednesday and Saturday.

The original New York cast includes Frank J. McIntyre, Elsie Ferguson, William Beach, Sarah McVicker, Arthur Shaw, Percival T. Moore, N. D. Blackmore, Nicholas Burnham, Edward Ellis, Richard Ogden, R. C. Turner, Maud B. Sinclair, Francis Golden Fuller and Morin Fuller.

THE KING RADIATED HEAT DRYER

On one of the advertising pages of this issue is an advertisement of the King Engineering Co., of Richmond, Va. While this name may seem new to some of our readers, the manager, George A King, is not, for he has been connected with the manufacture and building of dryers ever since we can remember, and recently organized the King Engineering Company. He is meeting with all kinds of success in the section of the country where he is giving his attention to the work.

Nearly everyone is acquainted with Mr. Morse, the manager of the Potomac Brick Co., of Washington, D. C., and know what he says about anything to be true. Read what he says about the King Radiated Heat Dryer in his letter of March 19th, it is in the advertisement found on another page.

The anemometer record below is of the Palomei Brick Co's. dryer after it was changed to the King system. Notice the miles velocity per hour. It is a perfect drying breeze in the summer time. This breeze can be regulated to suit the requirements of any kind of clay.

Air velocity in feet per minute and miles per hour passing through air flues of a Sharer Dryer after it was reconstructed to conform to the system of the King Radiated Heat Dryer, as per anemometer record taken on yard of the Potomac Brick Company, of Washington, D. C., March 19th, 1909. Height of chimney before and after reconstruction, 60 feet.

Tunnel	Upper Left Feet	Miles	Lower Left Feet	Miles	Upper Right Feet	Miles	Lower Right Feet	Miles
1	513	5.681	451	5.113	463	5 137	4 0	4.545
2	390	4.521	306	4.550	390	4.521	346	3.974
3	442	5.107	425	4.829	510	5.674	478	5.445
4	475	5.438	494	5.660	535	5.039	446	5.080
5	521	5.713	467	5 257	621	6.960	646	7.102
6	530	5.826	546	6.057	530	5.826	560	6.362
7	525	5.770	527	5.803	514	5.675	425	4.829
8	478	5.445	527	5 803	400	4.545	380	4.507
9	402	4.540	396	4.533	430	4.690	495	5.665
10	503	5.706	458	5.233	551	6.265	446	5.080

I certify the above to be correct.

ELLIOT S. MORSE,
Treas. and Gen. Manager.

Send for the facts relating to the King system of drying and see what the users are saying. Address the King Engineering Co., Richmond, Va., and let them know you saw the anemometer statement in the April 15th issue of the Clay Record.

PRIVATE FUNERAL FOR RETIRED BRICK MANUFACTURER

The funeral of Joseph J. Kulage, retired brick manufacturer, who died at St. Louis, Mo., of liver trouble, was conducted privately from the family residence, 1435 East College avenue, to Mary of the Perpetual Help Church, thence to Calvary Cemetery.

Mr. Kulage, who was 57 years old, was born in Germany and came to this country when a boy. He founded a brick manufacturing business in St. Louis when a young man, also owned a plant at Hobart, Ind. Seven years ago he retired from active business.

Mr. Kulage was decorated two years ago by Pope Pius X with the insignia of the Order of the Knights of St. Gregory in recognition of his work in behalf of the poor children of Rome.

INCREASE IN PAY OF CLAY PLANT LABORERS

Laborers in many clay factories at Perth Amboy, N. J., and vicinity April 1st received a slight increase in wages. This was in keeping with the promises of the officials of a number of the plants where strikes resulted recently. In some of the plants the laborers were advanced one cent an hour while in others the wages have been revised so as to be uniform. Several months ago the employes of the four plants of the National Fireproofing Company struck for fifteen cents an hour and their rioting resulted in the state troops being sent to Keasbey. The strike was soon settled, however, the men returning to work with the promise of General Manager H. M. Keasbey of the company that they would be given an increase as soon as business became better.

A little over a month ago the employes of the Henry Maurer Brick Works, the M. D. Valentine & Brother Brick Works, the Anness & Potter Works and the Mutton Hollow Brick Works in Woodbridge demanded an increase and went on a strike. It was feared that the laborers of the fireproofing company would go out again, but General Manager Keasbey ordered notices posted that on April 1st the men would receive their increase. This move was very opportune as it quelled any strike feeling among the employes and from April 1st on, they will get fifteen cents an hour instead of fourteen cents as formerly, and ten hours work a day.

The striking employes of the Henry Maurer Works, at Maurer were told that they would be given fifteen cents an hour instead of fourteen on April 1st, and they soon resumed work with that undersatnding. The increase took effect there on that date.

The four plants of the National Fireproofing Company where the raise took effect are as follows: The Perth Amboy plant; the Standard plant and Raritan plant at Keasbey; and the Lorillard plant at Keyport.

Some of the employes of the Valentine plant in Woodbridge today received an increase in wages. J. R. Valentine said that the wages had been made uniform.

At the Anness & Potter Works in Woodbridge the laborers have been enjoying an increase in wages since March 1st, as, when they showed dissatisfaction, the officials induced them to return with a promise of a raise. The laborers at Ryan's Mutton Hollow Brick Works in Woodbridge, who struck at the same time, resumed work and received an increase on March 1st.

Several other plants in New Jersey have also raised the wages of their employes slightly.

DECIDES RATE WAS EXCESSIVE

The Interstate Commerce Commission has decided that a rate of five cents per hundred pounds for the transportation of fire brick from Joliet, Ills., to Milwaukee, Wis., was excessive. The decision was made in the case of the American Refractories Company against the Elgin, Joliet & Eastern and the Milwaukee railroads, and it was held that the charge ought not to exceed a rate of four cents per hundred pounds.

SYLLABUS OF THE DECISION OF THE MINNESOTA STATE SUPREME COURT SUSTAINING DECISION OF SUPREME COURT

Following is the syllabus in the case of H. A. Spencer vs. the Albert Lea Minn. Brick and Tile Co., in which the plaintiff gets nothing.

Harvey A. Spencer, appellant, vs. Albert Lea Brick and Tile Co., respondent.

Plaintiff, engaged in putting dressing on a belt near the driving pulley in his employer's shop was "squatting down" on a beam under the roof with one leg over a rapidly revolving coupling in the main shaft. His clothing was caught in its projecting bolts. Plaintiff was badly injured. He was an experienced and educated mechanic of full age, whose duty it was to have a general supervision of the machinery of the plant. He had had abundant opportunity for observing the location and nature of the coupling. His own testimony tended to show that he had actual knowledge thereof. His attention had been directed to this particular coupling; and he had on the day before the accident, or on the previous day, repaired a companion coupling on the same shaft a few feet away. His cramped position brought the revolving coupling directly in the line of his sight; he said himself that he could have seen it if he had looked at it. To a limited extent, he admitted knowledge of the danger and appreciation of the risk. He attempted to work in a dangerous way although other practical and safe means were at hand. It is held that he assumed the risk and is guilty of contributory negligence.

The fact that the belt was smoking and might have burned at that place did not constitute such an emergency as to exonerate plaintiff from the consequences of his own conduct.

RED WING COMPANY BUYS PLYMOUTH POTTERY

An important business deal was closed at Marshalltown, Iowa, when the plant and business of the Plymouth Stoneware Company, of that city, passed into the hands of the Union Stoneware Company, of Red Wing, Minn. The consideration in the transfer was not give out to the public. The new company started to operate the plant April 12th, as soon as the invoice was completed.

In the city to close the deal, were E. S. Hoyt, of Red Wing, president of the Union Stoneware Company, who will also be at the head of the local business; George Cook, of Red Wing, general superintendent of the Union Company; and L. E. Armstrong, of Fort Dodge, president of the Plymouth Company.

The Union Stoneware Company is one of the biggest independent pottery concerns of the country, and has been in business at Red Wing many years, and the Red Wing pottery has a national reputation. The company owns two big potteries at Red Wing, and does a general stoneware business.

George M. Thompson, who has been superintendent of the local plant since the Plymouth Company bought it nearly a year ago, will continue to be superintendent for the new company. The Company employs fifty people.

NEWLY ORGANIZED CALUMET COMPANY WILL OPERATE PLANT NEAR ST. IGNACE

A new company has been organized in Calumet, which proposes to install and operate a new brick and tile plant in the vicinity of St. Ignace, Mich., on the D. S. S. & A. railroad. The company is capitalized at $50,000, divided into 5,000 shares, at a par value of ten dollars each. Half of the stock will be disposed of for cash and the balance will remain in the treasury of the company until such a time as additional funds are required.

The newly elected officers of the new company are: President, M. Van Orden; Vice-President, James J. Byers; Secretary, W. A. Bateman; Treasurer, C. E. L. Thomas.

The board of directors will be composed of the above officers, together with W. J. Reynolds, W. W. Harrris and E. A. Reavie. E. A. Reavie has been appointed business manager and will open an office at St. Ignace.

Messrs. Reavie and Bateman will make arrangements for railroad facilities for the new company. Mr. Reavie will have entire charge of the company's affairs and will direct them from an office to be established at St. Ignace.

The company will manufacture all sorts of brick and tile and should find a market for the entire output of the plant in the copper country. The building operations which are conducted here require a large amount of brick and tile and each year many car loads are shipped into the Copper Country. It is believed that a local company would meet with a big demand for such a product.

SHOT AND KILLED HIMSELF WHILE DESPONDENT

Despondent because of ill health and the recent loss of his position as convict warden for the Stevens Pottery Company, Capt. W. S. Tyson, aged sixty, a well-known and highly respected resident of Macon, Ga., shot and killed himself at his home on the corner of Fourth and Elm streets. Getting out of bed, and remarking to his wife that he felt badly, Capt. Tyson took a .38 caliber pistol from the mantel and, entering the adjoining room, shot himself through the right temple, just above the ear. He fell across a bed that two of his children occupied at night, dying instantly. Coroner Young found the body crosswise on the bed, with the face downwards, and the weapon tightly grasped in the right hand.

After pulling the trigger which sent the bullet crashing through his brain, Capt. Tyson was no more. His horrified wife, who rushed into the room too late to prevent the rash deed, tried in vain to arouse the already lifeless body, and almost fainted when she realized that her husband was dead.

Coroner T. E. Young held an inquest, fully investigating the occurrence. The verdict of the jury was, in effect, that the deceased came to his death by a pistol wound, the act being caused by despondency due to ill health and the loss of work. Capt. Tyson's duties as a warden ceased with the expiration of the convict lease system. He had been employed in that capacity for a long number of years. He had been ill for several months.

The surviving relatives are Mrs. Laura Tyson, and nine children.

BLUE ISLAND STARTS GOOD ROADS MOVEMENT

It is an encouraging feature of the movement for good roads, that the citizens of Blue Island, Illinois, have taken up the good work and are taking vigorous measures towards the proposed improvement of Vincennes Road.

Morgan Park has come forward, generously offering assistance. Chicago merchants and automobile clubs are urged to assist, as they would be directly benefitted thereby. Money is being raised by private subscription, the town boards, the county and the state may also be urged to assist.

Every encouragement should be given to this public spirited beginning of a much needed movement, which it is to be hoped will soon spread over the entire country and become a national problem.

The paving will in all probability be of brick, since it is more able to withstand the constant wear and tear of heavy traffic and especially the wear caused by the ever increasing travel by automobile.

THE LE CHATELIER PYROMETER CATALOG

The Le Chatelier Pyrometer is manufactured by the W. C. Heraeus Platinum Works and is used for measuring temperatures between zero and 1,600 degrees centigrade or up to 2,920 degrees Fahrenheit. It is constructed in accordance with the specifications of the Royal Physical Technical Institute at Charlottenburg. It is for sale in this country by Charles Engelhard, 30 Church Street, New York.

The Heraecus Le Chatelier Pyrometer has now been in service for many years in the most diversified industries. Thus, it is used daily in establishments for the manufacture of terra cotta, stoneware, porcelain pottery, fire brick, pressed brick, cement, chemical gas, assomulators, incandescent lamps, cartridges, ammunition, glass, steel, iron, iron foundries, machine and stove works and in schools and colleges. If you are interested in this work write for the seventeenth edition of their catalogue.

INDIANA MANUFACTURERS DEFEAT UNJUST LEGISLATION

The value of organization is shown by the result of the united efforts of the Manufacturers' Bureau of Indiana, and employers of labor, throughout the state, in defeating the large number of "Labor Bills," which were before the legislature. Several of these bills passed one house, but through the untiring efforts of the thoroughly aroused manufacturers of the state did not become laws.

These bills were without exception, unwarranted assaults upon the business interests of every employer of labor, and would make every employer liable to damages to his employees, whether caused by his negligence or not, from the farm hand to the engineer in the factory. This would have resulted in increasing the burdens and making it still more difficult for factories to exist and employ labor which is the backbone of the prosperity of the state.

The Manufacturers' Bureau is to be congratulated on the valiant work they accomplished in the defeat of these unreasonable bills.

SAND OR LIME BRICK OR BLOCK NEWS

The Oklahoma Cement Brick & Products Co. organized with $25,000 capital at Oklahoma City, Okla., will install a plant to make 20,000 brick daily.

The Peerless Pressed Brick Co., Detroit, Mich., has been organized with $10,000 capital stock. The stockholders are Frank W. Lane, M. C. Williams and John H. Emery. Cement brick will be made.

The LaCrosse (Wis.) Brick Co. will soon be organized to make cement brick by a process invented by E. J. Wage, who will be the president and manager of the concern. B. Ott & Sons are interested.

The Sand Lime Brick Co. at Port Jefferson, L. I., N. Y., is now finishing a large factory building on Port Jefferson Bay. The company has a fine dock and at present are dredging to deepen the harbor and widen the channel.

The Belt Line Brick Co., Minneapolis, Minn., have bought a Pullman motor car with which to deliver their brick to local contractors. Some class to this concern.

The Tri-City Sandstone Brick Co., Moline, Ill., has dismanteled their plant and the machinery sold and shipped to Dayton, O., where William H. Crume is the manager of a new plant which is to be constructed. The Saginaw Rotary Press system is used.

Application has been made to restrain the Pensauken Art Stone & Brick Co., Camden, N. J., from working their plant at West Palymra, by the receiver of the Pensauken Brick Co., to which they are successors, and that they are practically the same company.

Allan Hopkins has been elected a director and will be the secretary and general manager of the Fremont (Neb.) Granite Brick Co. A. M. Braugh and J. F. Hanson are also interested. A switch track is now being constructed into the plant so as to facilitate loading.

The Michigan Sand Lime Brick Co. has been organized, and are building a plant at Kalamazoo Ave. and P. M. Ry., Grand Rapids, Mich. The cost of the plant will be $40,000. The Saginaw Rotary Press system will be used. J. Z. Jackson, E. D. Church and others of Saginaw are interested.

The Lake Superior Stone Brick Co., Calumet, Mich., is constructing a dock at the Portage entry Brick works that will give 14 foot depth of water, which is sufficient to float any scow or tug used in hauling brick. J. W. Wyckoff is the manager. He says the demand for brick in the copper country will be very heavy.

The U. S. Brick Corporation, Michigan City, Ind., have been obliged to adopt a trade mark to protect themselves against others that make sandstone brick and have chosen the word "Casio" Ca being lime, Si silica and O, oxygen and the three properly treated with the proper machinery makes the Casio Brick and Stone.

The Silicate brick plant of the Cranford Paving Co., Washington, D. C., which was the International Division Method Process, is now turning out Silicate stone of all dimensions, the quality of which is better than the well-known Indiana Limestone. They are now furnishing the brick for the new Pennsylvania Railroad powerhouse in Washington.

MISCELLANEOUS ITEMS

W. H. Norton & Co., has purchased the brick and tile burns of J. W. Stahl at Somonauk, DeKalb Co., Ills.

Owasso, a village in Tulsa Co. Okla., is to have a large brick-making plant that will give employment to 100 men.

Albia, Iowa, wants a brick and tile plant. The Business Men's Association will endeavor to get some one to locate there.

John H. Stroot will install motor power in his brick yard at 14th & Chestnut Streets, Quincy, Ills. He has put in a new brick machine.

The Bippus (Ind.) Tile Co., have full force working and orders ahead for many cars of tile. They will add three kilns as soon as possible.

The Lebanon (O.) Pressed Brick Co., have built a new down draft kiln at Brecon and are over filled with orders making deep red pressed brick.

The Edgemont Feldspar Co., has been incorporated under New Jersey laws, with $100,000 capital stock, by J. E. Dunwoody, Francis C. Barton and Frank B. Graff.

The Altoona (Kansas) Vitrified Brick Works has been started again after a close down of several months so as to open a new bed of shale, build a tramway, and overhaul the machinery.

The Morris Brick & Coal Co., has finished their new plant at the shale beds east of Okmulgee, Okla., and now have a capacity of 50,000 brick daily. They make building brick exclusively.

John C. Zimmerman is making arrangement to re-enter the brick business and is repairing and enlarging his yard in Flint, Mich., so as to be ready the middle of May. He has been the sheriff for four years.

The Union City (Ga.) Brick Co., has been incorporated by L. M. Wright of Rome, Julian Baxter of Atlanta and L. Hull of Athens. The buildings have been finished and machinery is being installed to make 30,000 brick daily.

At a meeting of the Standard Brick Co., Milwaukee, Wis., George E. Burnham was elected president to succeed Albert Kroening, who was chosen vice-president to succeed J. H. Burnham. Robert Krepschmar was elected secretary.

The Northern Michigan Brick & Tile Co., St. Ignace, Mich., has been incorporated with $50,000 capital stock. The plant will be in Mackinaw Co. W. M. Harris and W. A. Bateman of Calumet and E. A. Reavie are the stockholders.

The Wilson Kiln & Dryer Co., West End Trust Building, Philadelphia, Pa., built the complete plant of the Pittsburg (Pa.) Coal Co., making 40,000 fire brick daily; also a complete plant for the Robinson Clay Products Co., at Akron, Ohio. See their kilns on page 45 of the CLAY RECORD.

At the meeting of the stockholders of the Royal George Coal & Fire Clay Mining Co., Canon City, Colo., A. E. Weston of Julesburg was elected president and treasurer and M. B. Rapp of Cripple Creek, secretary and vice-president.

The American Development & Reduction Co., has been incorporated with $1,000,000 capital stock by Davenport and Rock Island people. John K. Scott of Rock Island, is president, Frank S. Dodge of Davenport, Iowa, is vice-president and P. M. Sadler of Davenport, secretary and treasurer. They have bought 3,300 acres of clay ore and oil land in Calhoun County, Illinois, which they intend to develop.

Indiana parties are figuring on building a $20,000 brick and tile plant at Richland, Iowa.

J. B. Smith is working for another plant to be built at Pittsburg, Kansas, to manufacture vitrified brick.

John Mahaffa and son, Edward Mahaffa, are at Verona, Miss., to investigate a proposition to make brick and tile.

The Ft. Scott (Kansas) Brick Co., have orders on hand for 750 carloads of brick and are now working hard to fill orders.

The David Steumpfle Sons Brick Works at Williamsport, Pa., are working extra time so as to get out the rush of orders.

Henry Suer & Bro., Station H, Cincinnati, O., has purchased 30 acres of land near Rossmoyne and will operate a plant there.

The Hackensack (N. J.) Brick Co., has been incorporated with $30,000 capital stock by John R. Ramsey, Geo. M. Brewster and John S. Mackay.

The Geary (Okla.) Pressed Brick Co.'s plant has been bought by W. S. Roberts, J. O. Smith and D. Hutchens of El Reno. They will operate same at once.

The Hedgecock Brick Co., Winston-Salem, N. C., are making brick these days and building a new kiln and making other improvements so as to increase their capacity.

The Auburn (Pa.) Shale Brick Co., has started up again after a thorough overhauling and a lot of new machinery being added to the plant. The office is in Reading, Pa.

The Queen City Pressed Brick Co., Cincinnati, Ohio, has been incorporated with $25,000 capital stock by Dudley R. Howard, J. F. Scott, Edward Boldger and J. Lemkuhl. The company has a plant at St. Bernard.

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American Process Co.,
68 William St. NEW YORK CITY

W. A. Lander of Moscow, Idaho, expects to build a brick plant at Grangeville.

The West Branch Fire Brick Co., works at Renova, Pa., will resume operations after a six month's shut down.

D. W. Fulp of Bluefield, W. Va., contemplates establishing a brick works assisted by G. H. Handey of Randallman, N. C.

The making of brick by the Dickson (Tenn.) Brick Co., will be discontinued and a box factory substituted in its place.

Machinery has been placed in the plant of the Acme Brick Co., at Lumberton, N. C., and soon the plant will be in full operations under the guidance of J. Blackman, an experienced brick manufacturer. George E. French is secretary and treasurer. They will make 35,000 brick daily.

A big shale bed has been found adjacent to the railroad at Bristow, Okla., and a brick and tile plant is talked of for the place.

The Canton (O.) Pressed Brick Co., has increased its capital stock and elected P. H. Hardy president and P. B. Belden secretary.

C. M. Monroe, a well-known expert, is organizing a company to construct a brick and tile works at Jackson, Tenn. $70,000 will be invested in the enterprise.

The Oconee (Ga.) Brick & Tile Co., has been organized and Jesse Bone is president and manager. The buildings and kilns for a plant are about completed.

New machinery is being placed in the Terre Haute (Ind.) Vitrified Brick Co.'s plant so as to increase the capacity of the plant. The company now have 26 kilns.

B. M. Huntley, formerly the manager of the Boone (Ia.) Brick, Tile & Paving Co., has organized the Huntley Elevator Co., and will erect an elevator at Boone.

The 10 clay works at Brazil, Ind., are working full time, and a representative of a clay shingle factory is testing Brazil clays with a view of removing their plant there.

The Peerless Pressed Brick Co., Detroit, Mich., has been organized with $10,000 capital stock. The stockholders are Frank W. Lane, M. C. Williams, and John H. Emery of Detroit.

The brick plant of the Oroville (Cali.) Brick Co., located near Chardon, is now running. Electric power is soon to be installed and the capacity of the plant increased to 40,000 brick daily.

The Prewitt Brick Mfg. Co., Elgin, Texas, has been organized and building a plant between the Elgin-Butler brick plant and Elgin. Ira A. Prewitt is president, L. D. Prewitt, vice-president and manager, J. H. Stephens secretary and treasurer, and J. B. Morrison, the well-known brickmaker is superintendent.

The Westport Paving Brick Co., 22 Abell Bldg., Baltimore, Md., has been organized and will establish a plant to manufacture brick, etc. John W. Hall is president, J. K. Bartlett, vice-president, H. L. Carter, secretary and treasurer. The plant of the Baltimore Vitrified Clay Co., has been purchased and will be reopened.

The Wise County Brick Co., Bridgeport, Texas, is now turning out brick made from the shale from the coal mines.

The Brown Brick & Tile Works at Montgomery, Ind., has been sold to W. S. Rhoades.

The Melvin (O.) Tile & Brick Co., has been incorporated with $10,000 capital stock by F. J. Pendry, G. W. Wade and others.

The Hidden Brick Co., Vancouver, Wash., have closed contracts for 1,500,000 brick and have started their plant for the season.

The Standard Clay Products Co., south of Canton, O., has been sold to John Starkey, the former president and manager of the company.

Manager Wiley has purchased about $2,000 of new machinery for the Seneca (Kansas) Shale Brick Co. A new siding is to be built for the company.

Ada, Ohio, citizens have organized a company to make drain tile. The president is I. F. Anspach and the secretary and treasurer is George Rothrock.

The plant of the Lawrence (Kansas) Vitrified Brick & Tile Co., has begun operations for the season with Charles Elwell, the new manager in charge.

The Texas Brick Co., are building their plant at Abilene, Texas, after a careful test made by M. J. Craig, the superintendent. C. A. Lanius is president.

The Flint Brick & Coal Co., Des Moines, Iowa, will expend $100,000 on increasing the capacity of their plant. Among other things will be three new kilns, having a monthly capacity of 500,000 brick.

A plan is on foot to organize a $50,000 vitrified brick works for Bone Gap, Ills. G. F. Martin of Cynthiana, Ind., and L. F. Voyles, E. A. Morgan and George Porter and other leading citizens are interested.

John Wiebe, who has been connected with the Beatrice (Nebr.) Brick Works for some time, has purchased the interest of R. Klose and will conduct the business in the future. Mr. Klose will return to Germany.

A large brick plant will be established at Durant, Okla., by John P. Bramhall, secretary of the Durant Chamber of Commerce and J. D. Bramhall, a brick manufacturer from Cincinnati. Work on the plant will commence at once.

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Buy Amatite—the "Full Service" Roofing.

WHY buy a ready roofing that constantly needs painting and repairing to keep it serviceable? Amatite doesn't cost any more than these "half service" kinds, and will give you *full service* after it is laid, with no further care or attention.

Half the time the ordinary roofs go to pieces or fail to give good service because you neglect to keep them coated or painted. You are so busy doing other things that you forget to paint your roofs, and first thing you know they leak.

Now Amatite is made to be free from care and needs no special attention. It is a finished product, ready for the service required. *It needs no painting*, because it has a *real mineral surface* which makes all such expense unnecessary. All *you* need to do is to nail it on the roof and your roof troubles are over.

If your dealer does not keep Amatite, drop a card to the nearest office named below, and a sample and booklet telling more about this roofing will be mailed you at once. Barrett Manufacturing Company, New York, Chicago, Philadelphia, Boston, St. Louis, Cleveland, Pittsburg, Cincinnati, Kansas City, Minneapolis or New Orleans.

WANTED

A practical man with experience to take charge of good brick and tile plant. Must have $1000 to $15000 to put into the business with us. Good opportunity to the right party.

Uniontown Brick & Tile Co.
Uniontown, Ky.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

Two, Three and Four-Mold Presses. Stiff mud auger machine. Pug mill and cutter. One pulverizer and one mixer. Two small engines. Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

Southern Brick & Tile Co.
Louisville, Ky.

GOOD PLANT FOR SALE

At a reasonable price a well equipped brick plant in town of 4000, county seat; Frisco, Missouri Pacific, and M. K. & T. railroads. Forty-two miles from Kansas City. Good machinery, fine shale and excellent water, capacity 30,000, town just paving streets; will put in several blocks this season. Have contract for new city building to aggregate 200,000 brick. Will sell at reasonable figure, turning all business over to purchaser. This plant is for sale on account of death of Dr. A. Reichard, proprietor. For further information address

WALTER V. REICHARD,
Paola, Kansas

FOR SALE

Profitable brick plant and business; 20,000 capacity. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo

FOR SALE

Vol 1 of Sager's Collected Works. Book is in splendid condition. Price only $5. Answer at once.

Book, care of Clay Record,
Chicago

FOR SALE
SECOND HAND MACHINERY

Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2¼ in. to 1½
One McGowan & Co. 6 in. to 6 in.
One Blake 6 in. to 6 in.
One Erie Engine 75 h. p.
One No. 7 Dean 4in. to 6 in.
One Blake 3 in. to 4 in.
Two Cameron 3 in. to 4 in.

Three Centrifugal pumps 4½ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in. Buffalo Force Fans. One Sturtevant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make. One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill. One No, 2 and No. 3 Mead Mill. Four 32 in. and one 42 in. Munson Mills.

The above machinery has been used only a short time.

S. KRUG WRECKING CO.
Nebraska City, Neb.

BOOK WANTED

Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

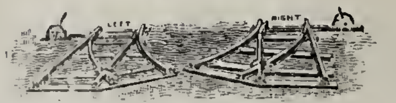
Book, care Clay Record,
Chicago, Ill.

FOR RENT

The Mendota Brick and Tile plant to rent on easy terms. Good home trade and shipping trade over three railroads. Apply at once to

Mrs. Wm. Stare,
Mendota, Ill.

FOR SALE



Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

BRICK MACHINERY FOR SALE CHEAP

One—125 H. P. Atlas Engine.
Two—80 H. P. Atlas Boilers.
One—9 foot Raymond Dry Pan.
One—No. 77 Raymond Brick Machine.
One—Raymond Rotary Cutting Table.
One—10-ft. Raymond Pug Mill.
One—2 Cylinder Steam Hoist.
104—Steel Frame Dryer Cars with iron pallets.
Two—Transfer Cars, six tons, 12 lb. rails.

Five acres of good brck shale and cheap natural gas. Good reasons for selling.

Address: P. O. Box 206
Iola, Kansas

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Bensing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32,000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12,000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address

J. M. CRABILL
Clarinda, Iowa.

FOR SALE OR LEASE

Good soft mud brick plant in city of 10,000 in Indiana; capacity 25,000. Will be sold at a bargain on easy terms; good reasons for selling. Address

R 5, care Clay Record,
Chicago, Ill.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago, Ill.

WANTED

Second-hand, two or four-mold dry-press brick machine. State condition, where located, and lowest cash price; also name of manufactuerer, when bought, and amount of brick made or how long used. Address Dry Press:

care Clay Record, Chicago, Ill.

Clay and Coal For Sale or Lease

Have 1,500 acres of the celebrated Carter Co. fire clay and coal land to sell very reasonable or lease on royalty. Three veins of fire clay and one three and one-half foot of coal in same hills at Denton, Ky., on line of two railroads.

Fine prospect for oil and gas.

Address: J. H. BURDETTE,
622 West Caster Ave.,
Ashland. Ky.

FOR SALE

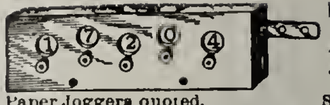
One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer.
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO.
Norristown, Pa.

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.

Address Brick Supt.,
P. O. Box 81, Coffeyville, Kans.



No better made, cut from $8 and $10, to
4 Wheel, $3 00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers
Paper Joggers quoted.
R. A. HART. 41 White St., BATTLE CREEK. MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machihe; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill. Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments W. L. JONES,

Lock Box 5, Williamsburg, Va.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio.

Address A. B. care Clay Record,
Chicago, Ill.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR TRADE

Well equipped brick and tile plant in central Iowa. Everything complete and ready for business. Plant cost $20.000 and will pay good dividend at that figure. What have you to offer? Will conider good land (prefer clear land as plant is unencumbered) in exchange. Give legal description, price and fullest particulars in first letter

Address Owner,
Box 253, St. Paul, Minn.

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana."
Care Clay Record. Chicago. Ill.

WANTED

Man to operate dry press brick plant. Daily capacity 20,000. Must understand machinery, also setting and burning of brick. State age, experience, salary and references.

Address Durango Pressed Brick Co.,
Durango. Colo.

FOR SALE

Brick Yard for sale, only yard in city of 7000; modern machinery; only bed of clay suited for brick; nearest competitor 30 miles. Good reason for selling. A fine chance for a practical brick manufacturer. Address:

ADAM PAULUS
Marshfield, Wis.

WANTED

A position as manager, sales manager or superintendent by a young man with fourteen years practical experience in the brick business in all its details from clay pit to scaffold; together with a thorough knowledge in the most up-to-date methods in use in the various plants throughout the country. A-1 references.

Address N. Y.,
Care of Clay Record, Chicago.

WANTED

One second-hand medium size steam shovel for handling clay or sand.

Address E. J. KELLER,
Lexington, Okla.

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS-Fire Box—80, 60, 50, 40, 35, 30, 25. 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.
1732 Powers Street Cincinnati, Ohio

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY
1413-G Street, N. W.
ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

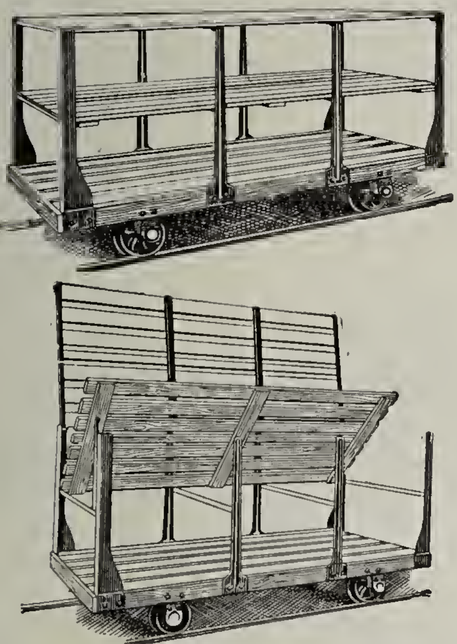
Yours very truly,
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company we can do for You. We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

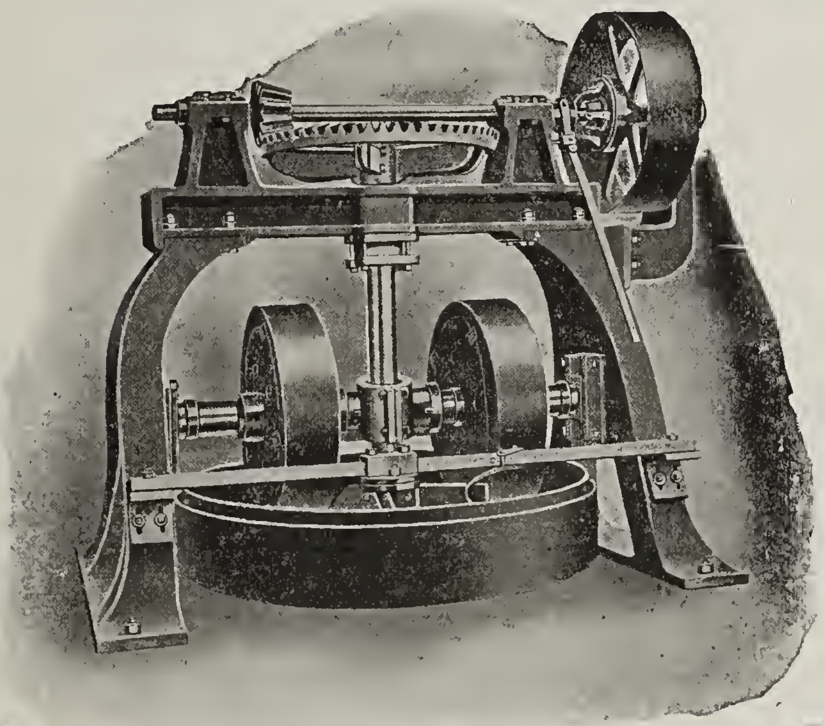
THE KING ENGINEERING COMPANY
RICHMOND, VA.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA

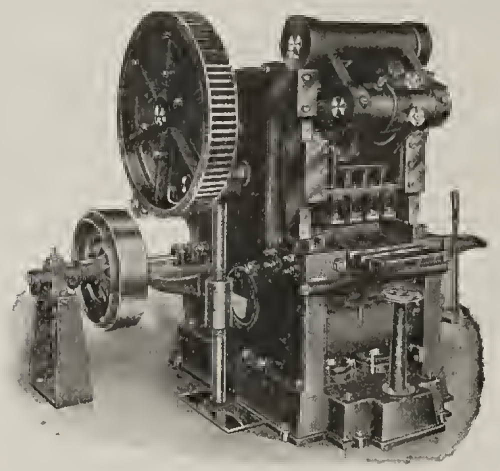


PHILLIPS & McLAREN CO. PITTSBURG, PA.
BUILDERS OF
Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.
ROCK AND ORE CRUSHERS

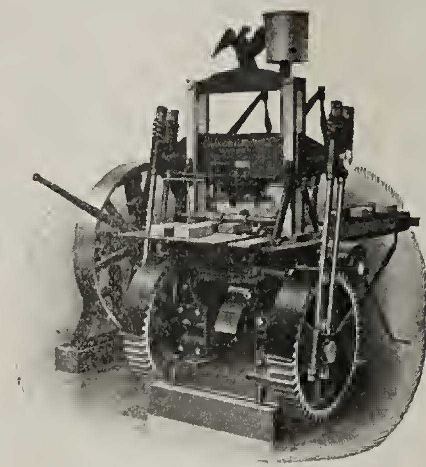
When writing for prices state kind of material and capacity required.

Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

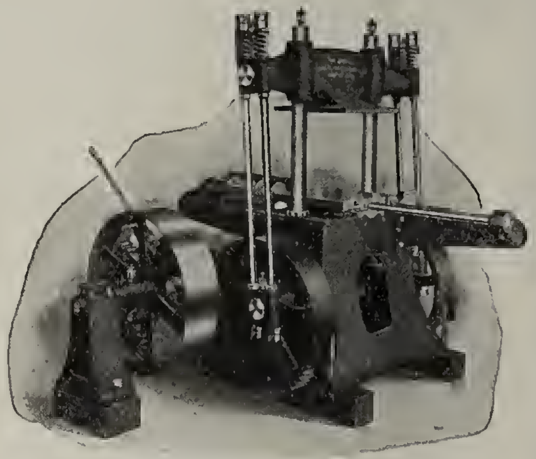
THE AMERICAN CLAY MACHINERY COMPANY
BUILT RIGHT RUN RIGHT
BUCYRUS OHIO, U.S.A.



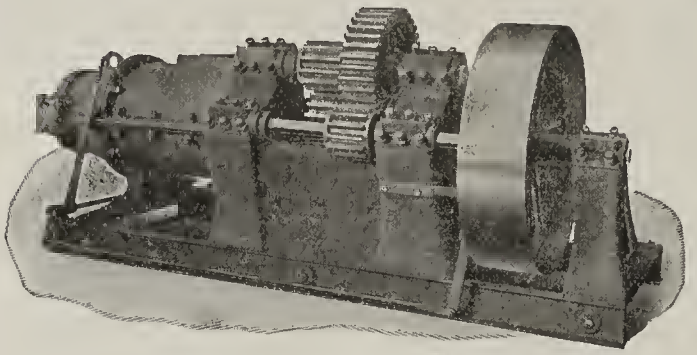
Model "B" Dry Press



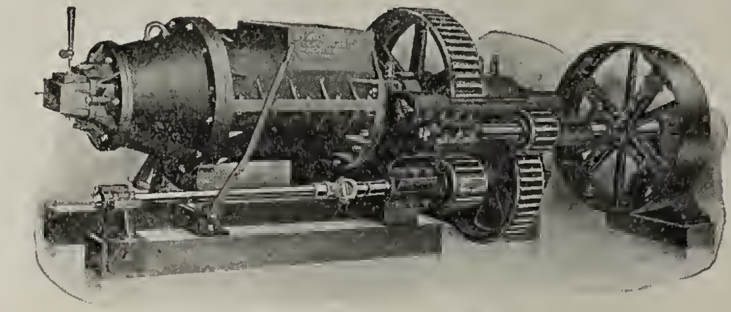
Eagle Repress



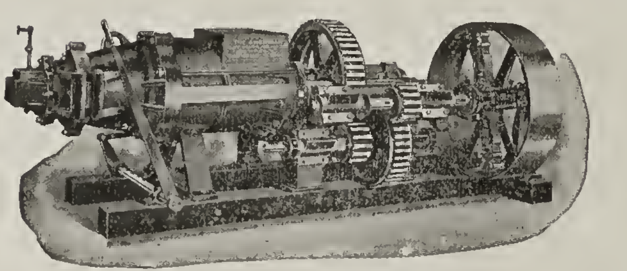
Roofing Tile Press



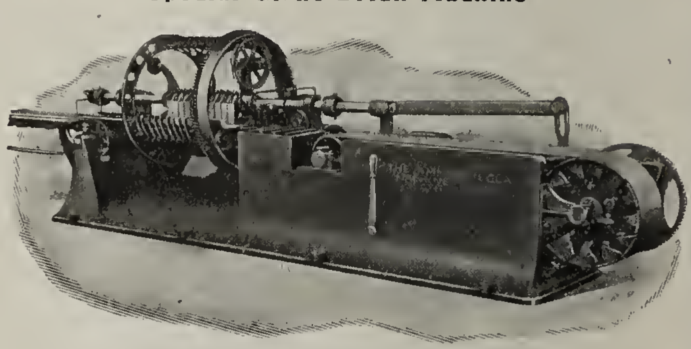
No. 65 Auger Brick Machine



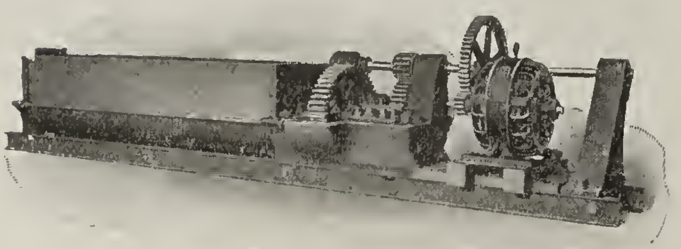
Special Giant Brick Machine



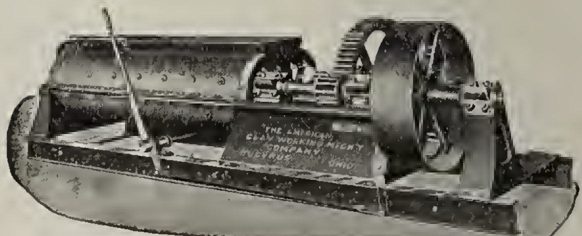
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



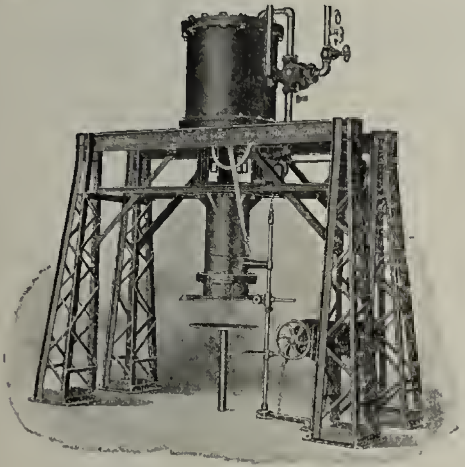
No. 38 Double Shaft Pug Mill

We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

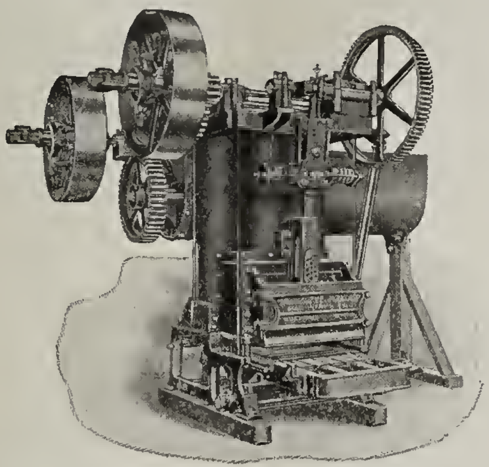
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

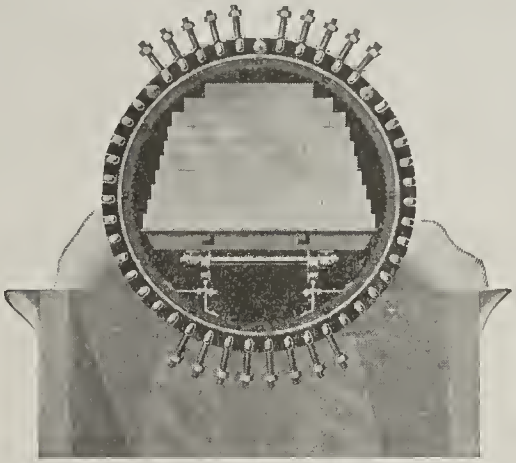
BUCYRUS OHIO, U.S.A.



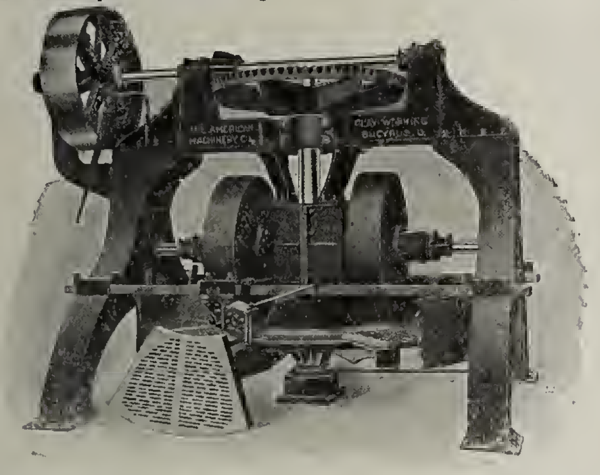
Sewer Pipe Machinery



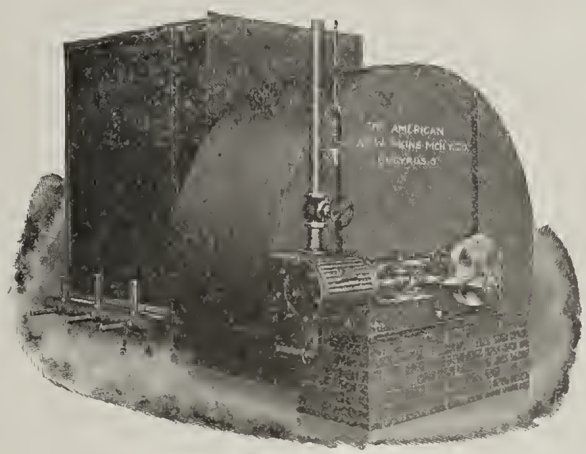
Upright Stock Brick Machine



Sand-Lime Brick Machinery

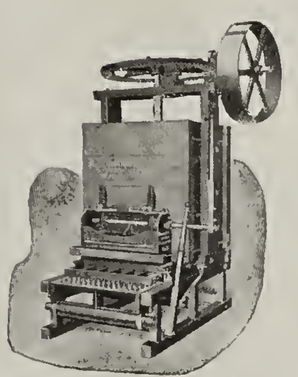


9 Foot Dry Pan

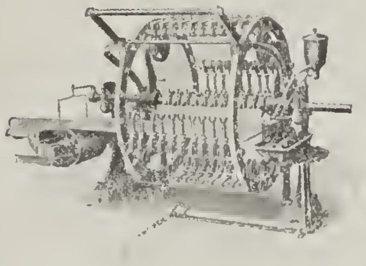


Blower Dryer Apparatus

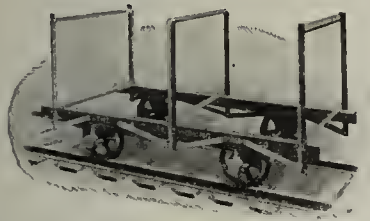
Mold Sander



H. P. Brick Machine



No. 62 Hand Power Cutter



Dry Cars

Disintegrators

Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

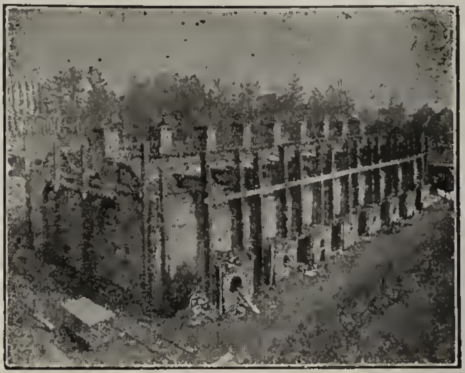
Fire Brick——Fire Clay

AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.
MEXICO, MISSOURI

Something New In Brick Kilns and Dryers



The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of advantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903. Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

NOW READY—A TREATISE ON

PRODUCER-GAS and GAS-PRODUCERS

BY AN ACKNOWLEDGED AUTHORITY.

A 300-page book containing thirty chapters, giving the fundamental principles and definitions, calculations, classifications, manufacture and use; the fuel, the requirements, the history, its by-products, **Producer-Gas for firing kilns, steam boilers, and power plants.** The future of the Gas-producer and a bibliography.

OVER 100 CHOICE ILLUSTRATIONS—PRICE, $4.00.

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CLAY RECORD PUBLISHING COMPANY
CHICAGO, ILL.

CLAYS

Their Occurence, Properties and Uses
With special reference to those of the United States, by Heinrich Ries, Ph. D.
Octavo, 490 pages, 65 figures, 44 plates
PRICE $5.00 NET

Clay Record Publishing Co.,
Chicago, Illinois

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate. Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company
Sole Manufacturers Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.
30% to 60% less Speed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE
We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

AMERICAN PULVERIZER CO.
Suite 410 Jaccard Bldg., ST. LOUIS, MO.

DISTRICT SALES OFFICES:
F. C. Willis, 36 LaSalle St., Chicago, Ill.
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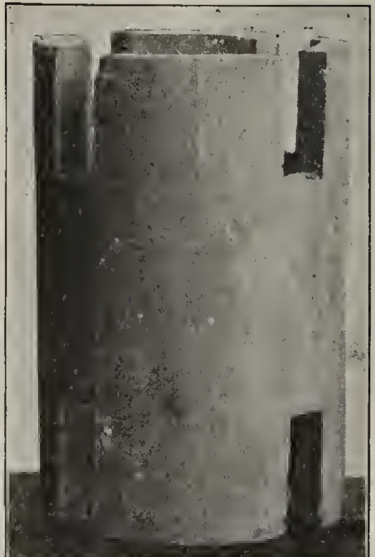
Lindrooth, Shubart & Co., Boston Bldg., Denver, Colo.

A Side Line For YOU

MAKE INTERLOCKING BUILDING TUBES AND MAKE MONEY



You can get more profit on your clay and labor by making these tile than you can by making drain tile.

Cost of Getting Started Very Small

Territory Rights Secured or a Small Percentage of Your Sales

Van Wie Interlocking Building Tubes

sell like hot cakes. They lower the cost of construction, make walls that protect better from heat or cold on account of air space, and permit more rapid erection of buildings. Just the thing for Silos, Farm Buildings, Residences, Stock Buildings, Hot Houses, Granaries, Cisterns, Wells, and large Sewers.

Write for information to

ELMER E. VAN WIE
KENOSHA, - - WISCONSIN

Haigh's New System of Continuous Kiln Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

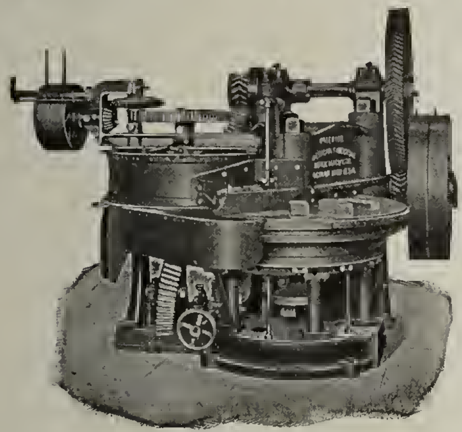
Points of Superiority: Cheapness in construction. Easy to understand and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

ANDRUS BRICK PRESS
MAKES REAL MONEY

Send for proof; also details about our Hand Presses, Dry Pans, Pulverizers, Mixers, Crushers, Elevators, Screens, Clay Plows, Clay Gatherers, Shafting, Hangers, Pulleys, Belting, Trucks, Barrows, Kiln Irons, Dryer Cars, etc.
SCOTT MANUFACTURING CO., 3rd National Bank Building, ST. LOUIS, MO.

The American Sandstone Brick Machinery Co.
INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and we defy contradiction.

THE
CLAY WORKER'S HAND=BOOK
A Manual for all Engaged in the Manufacture of Articles from Clay
JUST OUT : : PRICE $2.00

Send for full descriptive Circulars

New CLAY FEEDERS and MIXERS for Brick, Tile and all Clay Working Plants

Saves the labor of from 1 to 2 men in every factory, besides mixing and feeding the clay evenly to the disintegrator

One of the many testimonials we have received from users of these Feeders

SUMMITVILLE DRAIN TILE COMPANY
Manufacturers of **Porous Drain Tile**

Harry L. Erlewine, Secy. and Treas.,
Marion Machine, Foundry and Supply Co., Marion, Indiana
Dear Sir:

Acknowledging your favor of the 21st inst., will state that the type "C" Feeder which we have installed in our plant here is "making good" in every way and is all you claim for it.

Since installing the Feeder we have been able to get along with two men less, thereby reducing our weekly pay-roll $20.00 and at the same time have increased our output 10%. decreased our power 10%, and as our capacity is 1200 cars per year, you can easily see the great advantage we have since installing the Feeder and Mixer.

All this saving is effected because of the even, steady feeding of the clay to our disintegrator. We have our tracks elevated about 9 feet above your Feeder and Mixer, and we are enabled to dump about 25 car loads of clay in our storage bin over the Feeder, and the Feeder takes care of all this clay without any further attention on our part.

We feel that this is one of the most valuable machines we have in our plant and no one who has ever tried one of your Clay Feeders would go back to the old way. Thanking you for the courtesies shown, we remain

Very truly yours,
SUMMITVILLE DRAIN TILE CO., Per JAMES F. MORRIS, Vice-Pres.

MARION MACHINE, FOUNDRY and SUPPLY CO., Marion, Ind.

Do Your Brick Turn White?
HERE IS THE REMEDY.
PRECIPITATED
Carbonate K.B. C.F.H. **of Barytes**

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

GABRIEL & SCHALL
205 Pearl Street NEW YORK P. O. Box 1712

They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous 'Red Brick" Brand

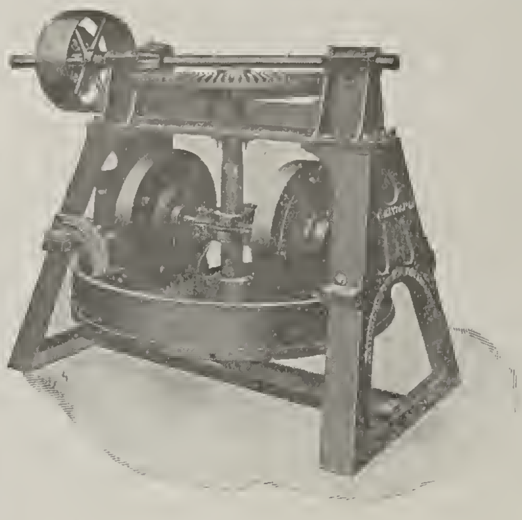
..COLOR..

for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

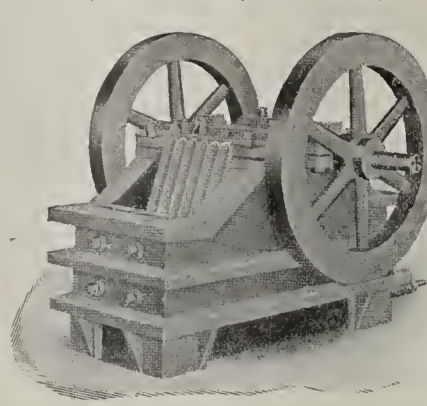
RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WISCONSIN.

C. K. WILLIAMS & CO.
EASTON, PA.
BRICK AND MORTAR
COLORING

THE HAYDEN DRY PAN.



THE HAYDEN CLAY CRUSHER.



THE HAYDEN
BRICK TESTING RATTLER

Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
Acurate mechanism.
Independent or yoked mullers.

Send for specifications and prices before buying.

This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

Send for circular and prices.

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES,
RATTLERS, BRICK CARS, CARWHEELS, AXLES, KILN BANDS, etc.

112 West Broad Street
COLUMBUS, OHIO

BRICK and TILE MACHINERY

FOR THE MAN WHO WANTS THE BEST

Brick and Tile Machinery is like anything else—It requires experience to build it right.

We have been in the business for 30 years and our present types are the result of this experience combined with the very best mechanical principles of the age.

Our Vertical Mills will make tile up to 24 inches— Our Horizontal Machines, will make anything that can be made on an augur machine, make it fast and make it right.

Write us for catalog describing our Augur Machines, Granulators, Pug Mills, Disintegrators, Crushers, etc.

Give us the capacity of machine desired and condition of your clay and let us tell you what you need.

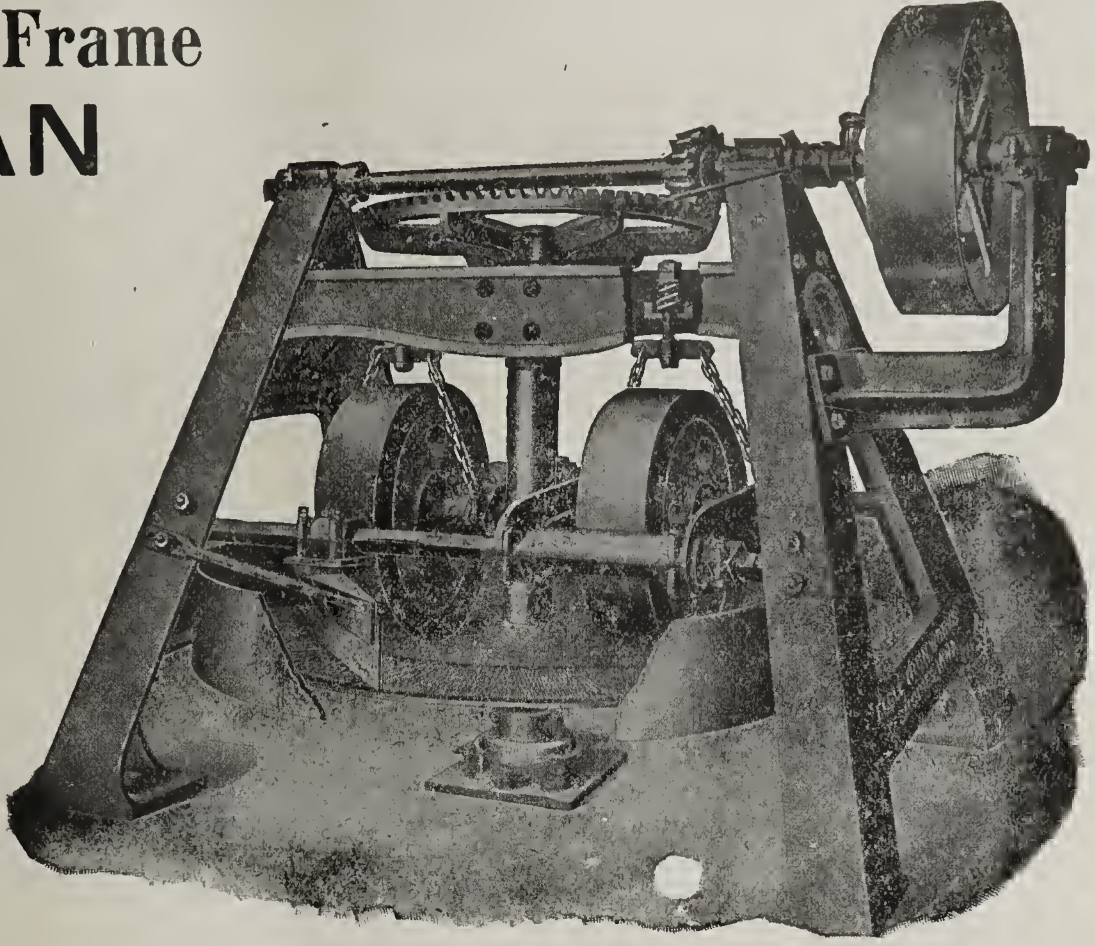
MADDEN & COMPAMY, RUSHVILLE, INDIANA

Nine Foot Iron Frame
DRY PAN

With Independent
and Suspended

MULLERS

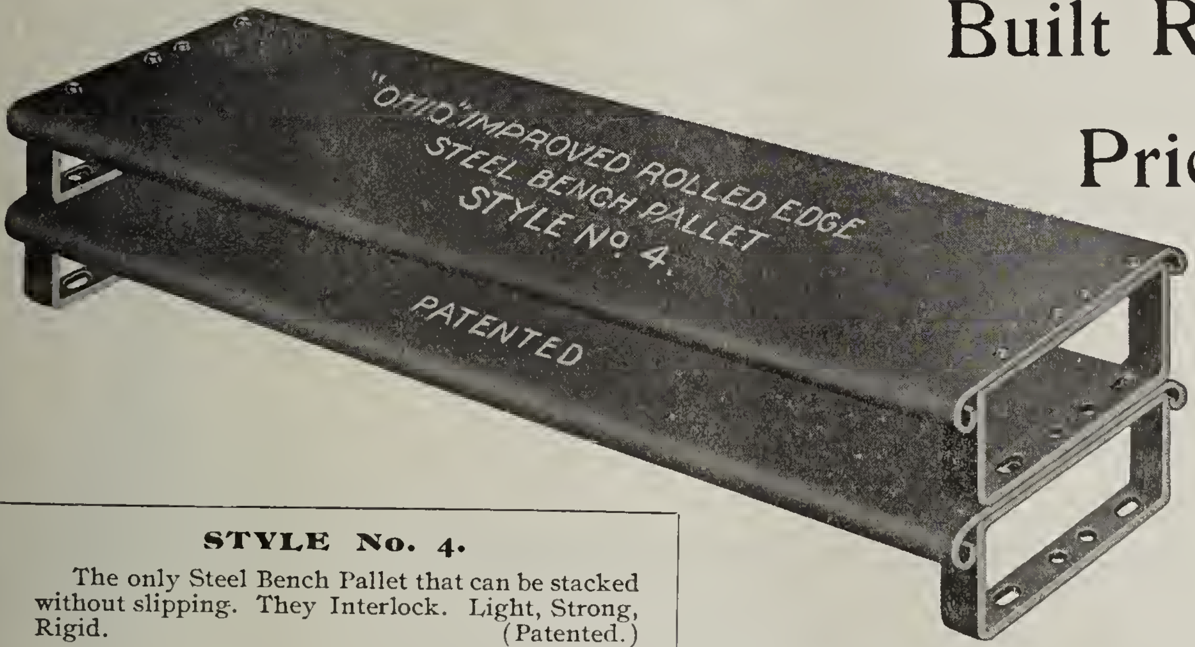
A well-tried and
proven Success.



EAGLE IRON WORKS, BUILDERS, DES MOINES, IOWA

Steel Brick Pallets

Built Right,
Price Right,
Write Us



STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

ALL STYLES

MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.
NILES, OHIO

Built of Silicate Brick Made by the "Division Method"

THE PHILADELPHIA OPERA HOUSE
Shown with Porches Not Quite Completed

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 160 feet on Poplar Street.

How would you like to make Brick suitable for Facing Buildings like this and do it cheaper than common brick can be made in any other way out of sand and lime?

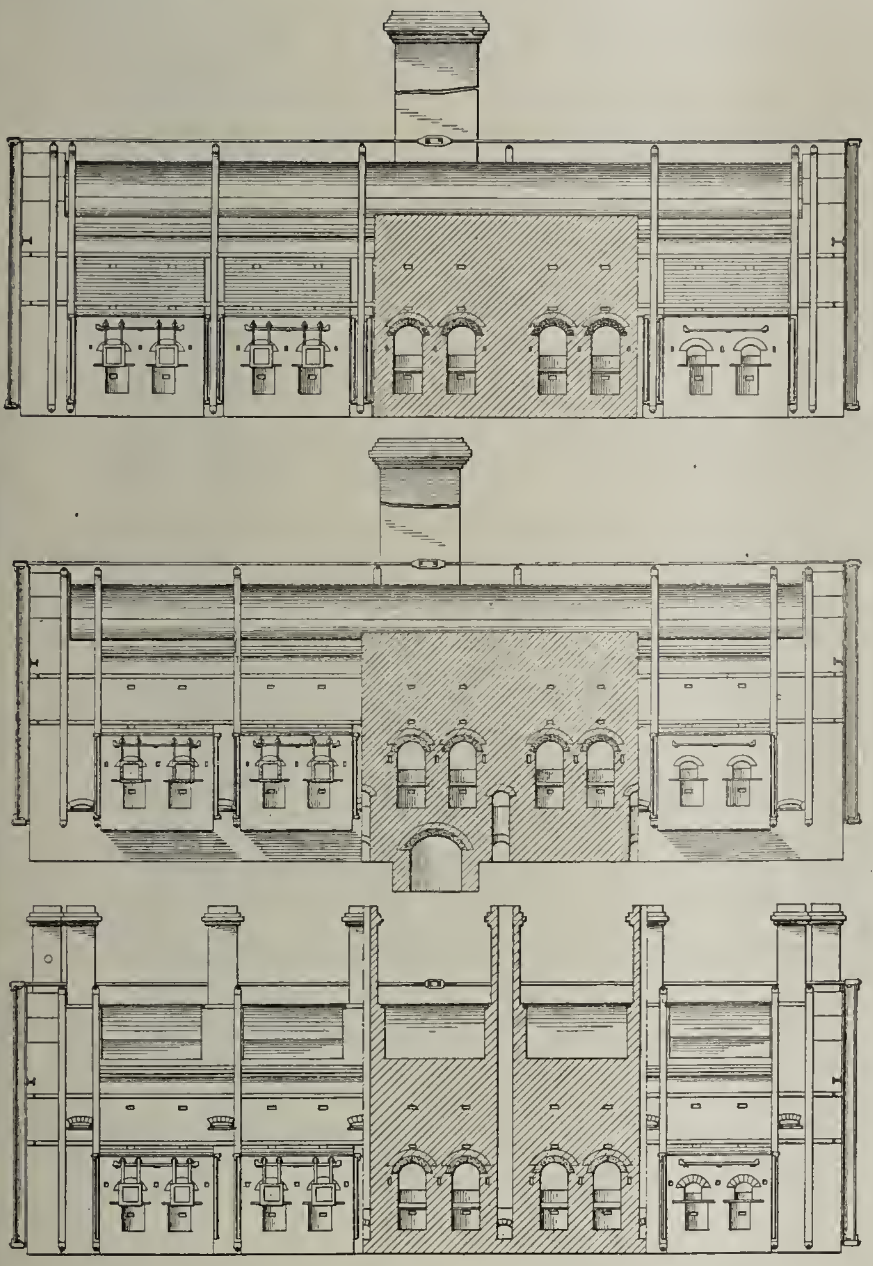
We challenge any one to make as good a brick as we do by our process, at as low cost, or at any price whatever. The factory we recently built at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

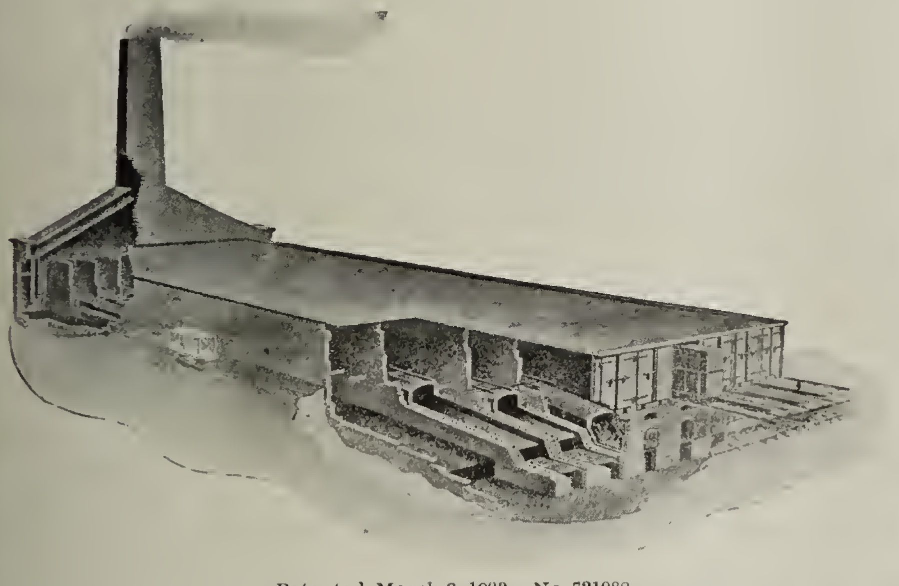
International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories
90 WEST STREET, NEW YORK, N. Y.

Wilson Kilns and Dryers



Patented July 8, 1902. No. 704418



Patented March 3, 1903. No. 721988

THOMAS M. WILSON

Mr. Wilson is the Inventor and Patentee of the Wilson Kilns and Dryers, including the smoke consuming furnaces which will burn brick without smoke, also the Continuous Waste Heat System, which does away with the smoke nuisance.

Mr. Wilson has served twenty-five years in a practical way in the brick business and his judgment in building up-to-date, successful Brick Plants is second to none in the business.

The Wilson Kiln & Dryer Company, established 1898, has arranged with Mr. Wilson to use his improvements; also for his assistance.

Our Brick Kilns are modern in every way and have proven successful wherever built. Our Radiated Heat Dryer has more radiating surface than any other dryer in use, they are economical in construction and in operation and have proven satisfactory wherever used.

We believe we have the most satisfactory kiln and dryer system to produce results on the market.

WILSON KILN & DRYER CO.
West End Trust Building
Philadelphia, Pa.

Thomas M. Wilson, President

YOU CAN'T FIND IT IN THE DAILY REPORT

The secret of success in the brick business does not lie altogether in compiling and studying the daily report, but back of all this is the underlying secret of knowing each and every condition as it actually exists on the brick yard. We have in our employ practical brick men, who, while knowing the value of theory, can put on their jeans, go out on the yard and after spending the necessary time there, they can submit a complete report enumerating both good and bad features. Very often our man can show short cuts in manufacture, and savings in cost which might mean the saving of hundreds and sometimes thousands of dollars.

"WE HAVE NOTHING TO SELL BUT OUR SERVICE"

United States Engineering Co.

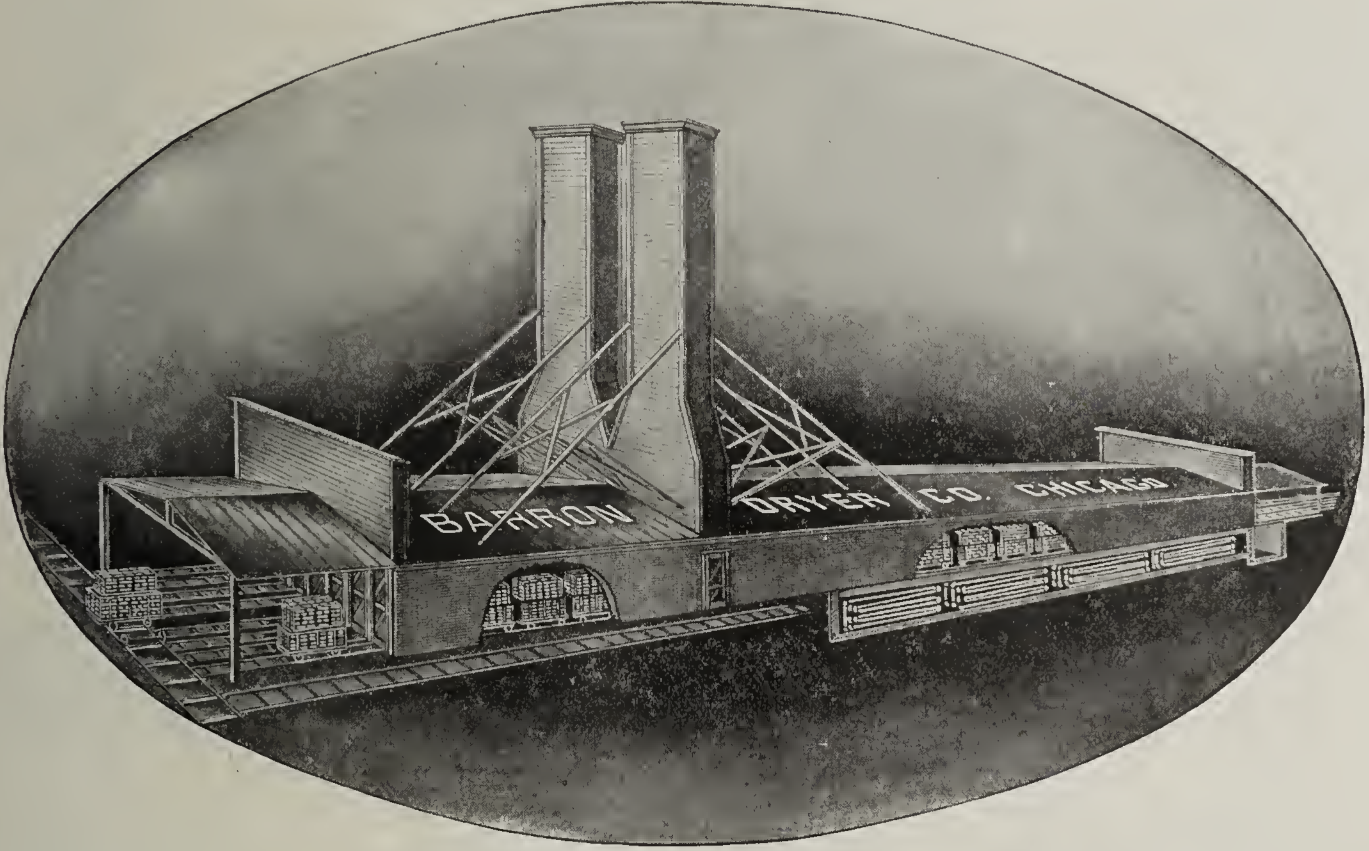
18th Floor, Third National Bank Building ST. LOUIS, MO.

BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



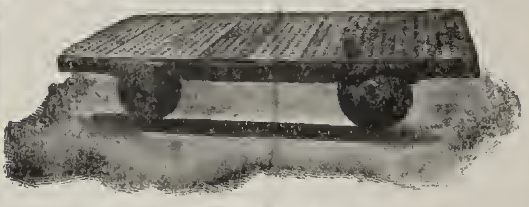
CARS, WHEELS, AXLES, DECKS, TURNTABLES
CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

OFFICE AND SHOPS **18 SLOAN STREET** ON C. & N. W. RY. **CHICAGO**

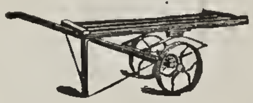
THE "MARTIN" CLAY-WORKING MACHINERY

IS KNOWN THE WORLD OVER FOR

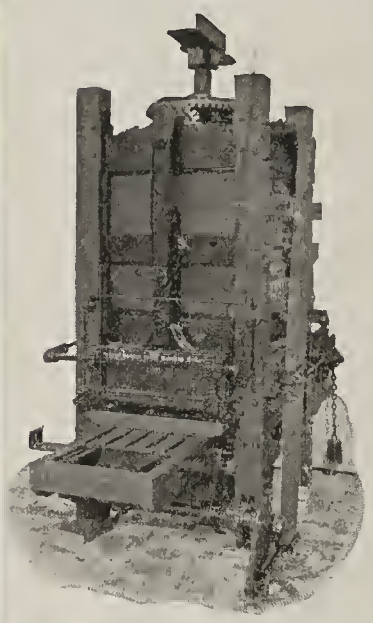
ITS SIMPLICITY, DURABILITY AND COMPLETE SATISFACTION THROUGHOUT



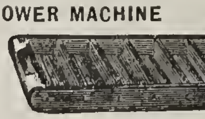
DRYER CARS



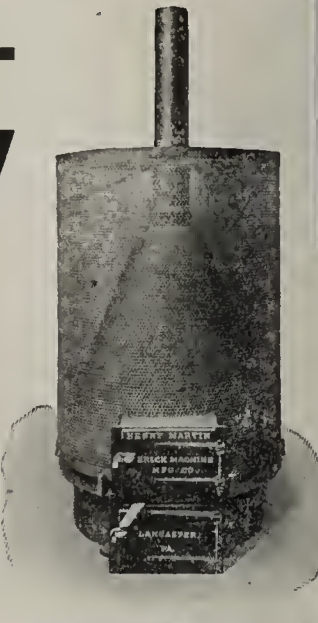
TRUCKS



HORSE POWER MACHINE

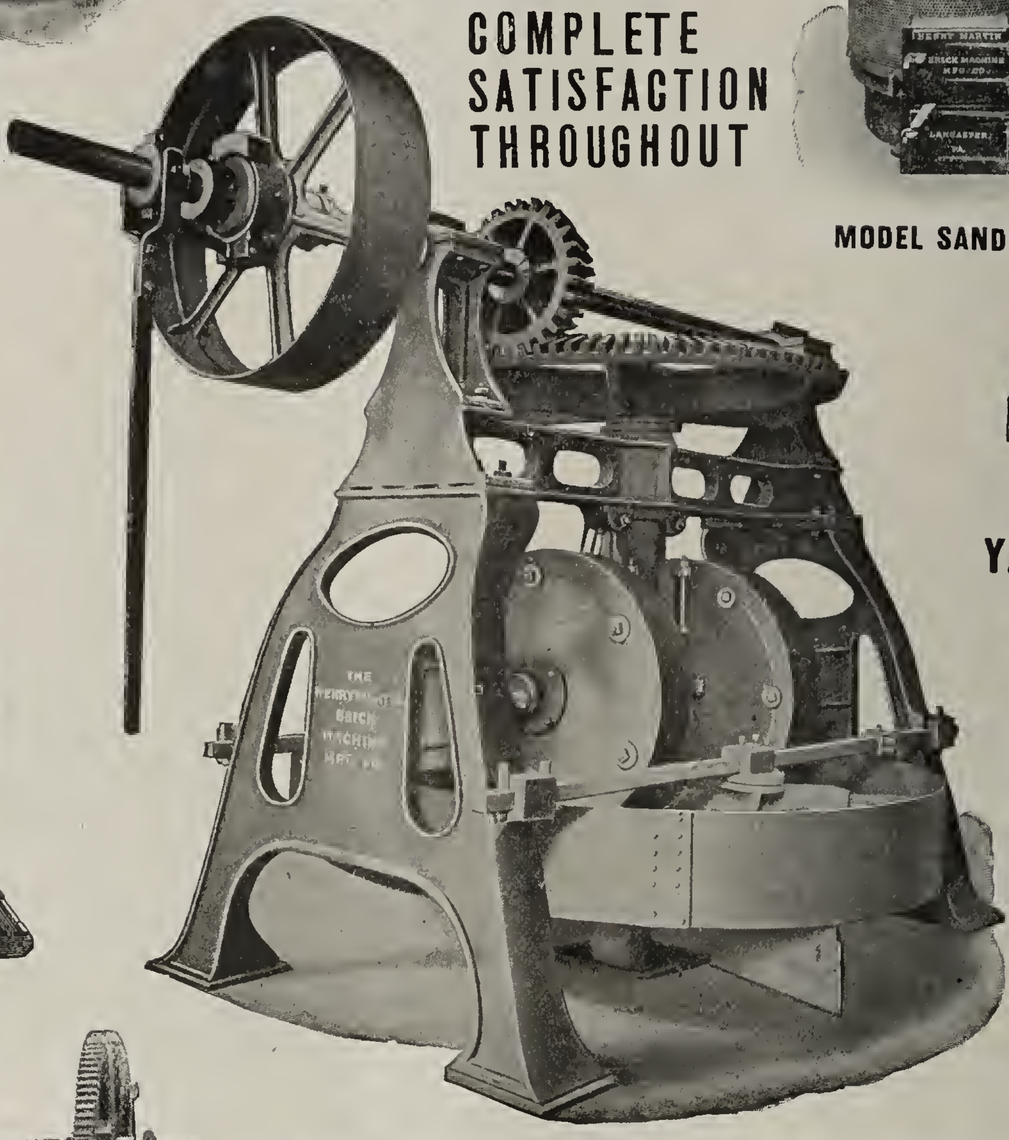


BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET

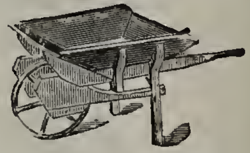


MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY



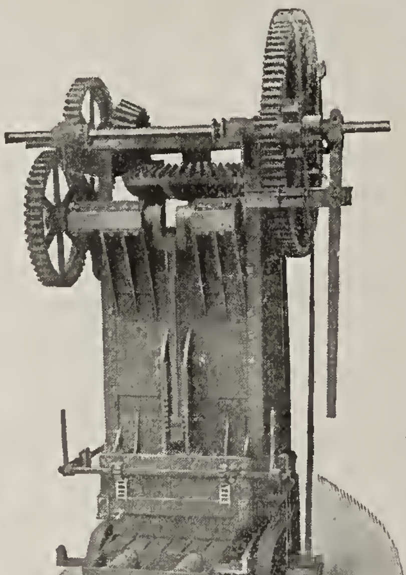
YARD SUPPLIES



OF ALL KINDS BUILT RIGHT

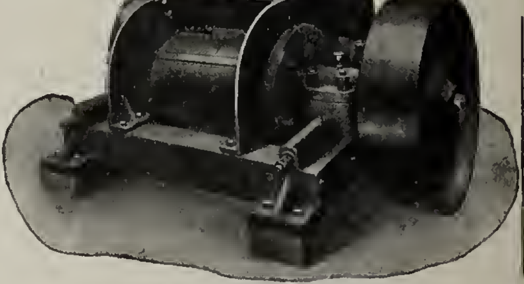
TRUCKS

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

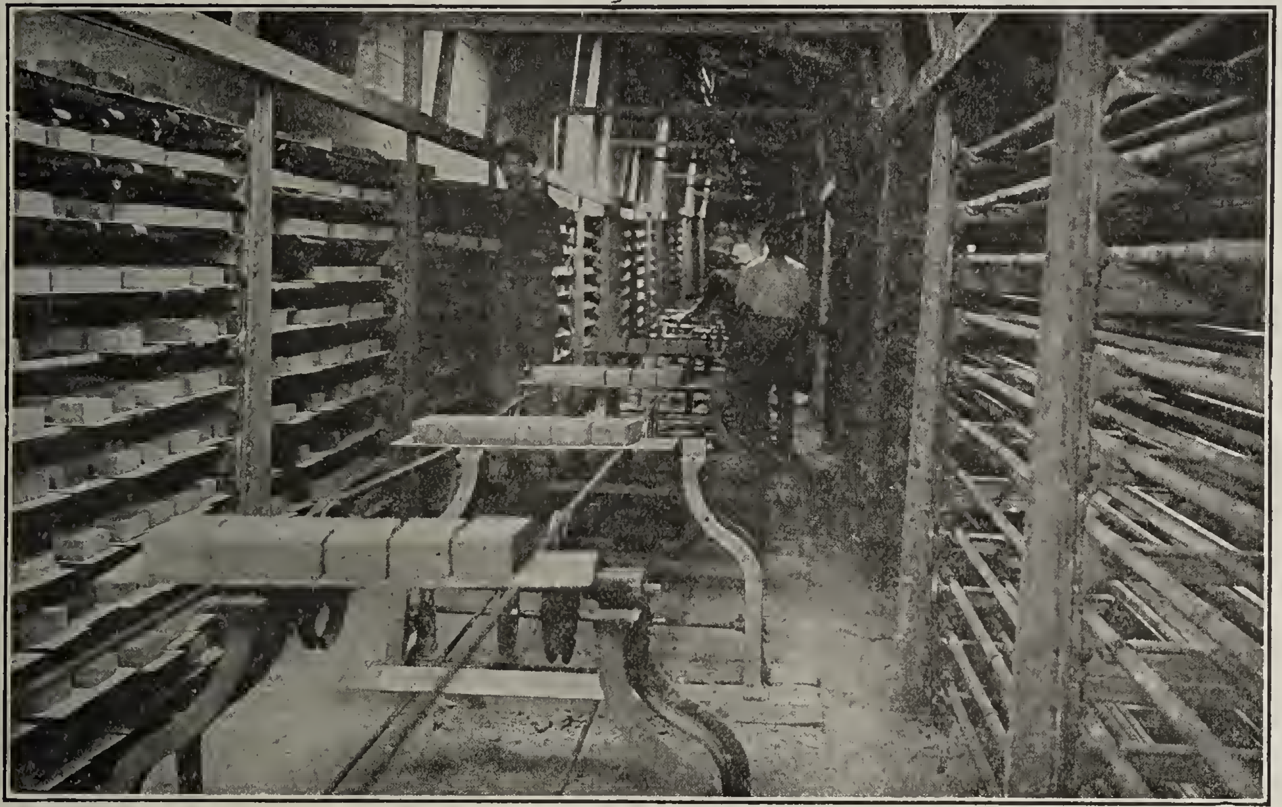
PATENTED

February, 22d, 1898,	No. 599509
October 10, 1905,	No. 95520
November 14, 1905,	No. 804489
May 26, 1908.	No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞



☜ LABOR SAVING THROUGHOUT ☜

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 3 Shovel—George Gynn Brickyard, Cleveland, Ohio

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Ouly One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

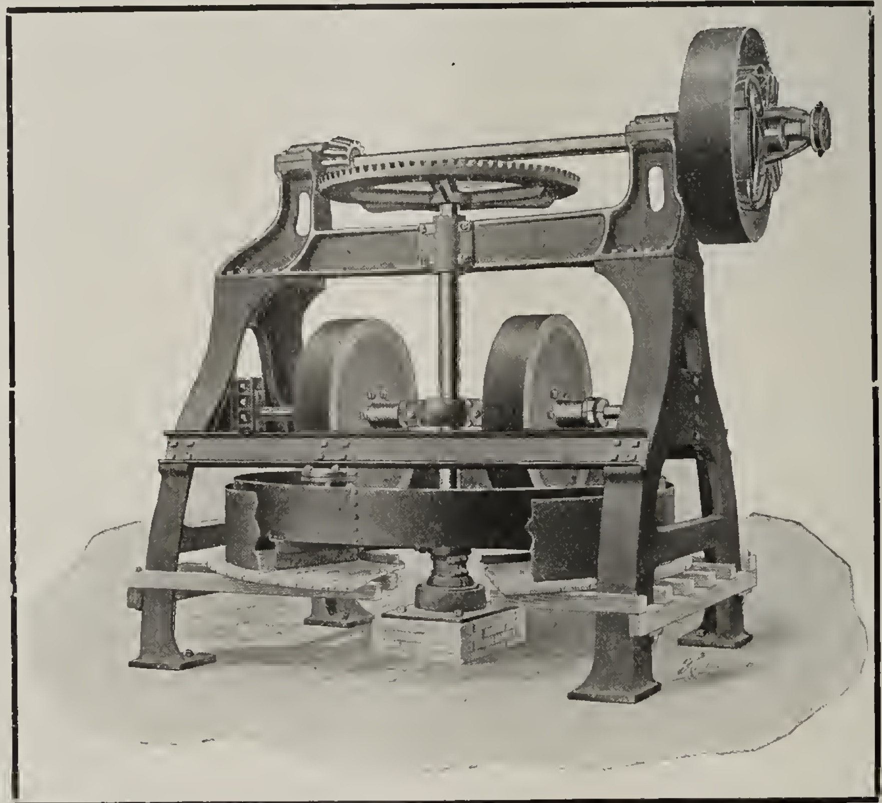
Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

THE THEW AUTOMATIC SHOVEL CO.

LORAIN, OHIO

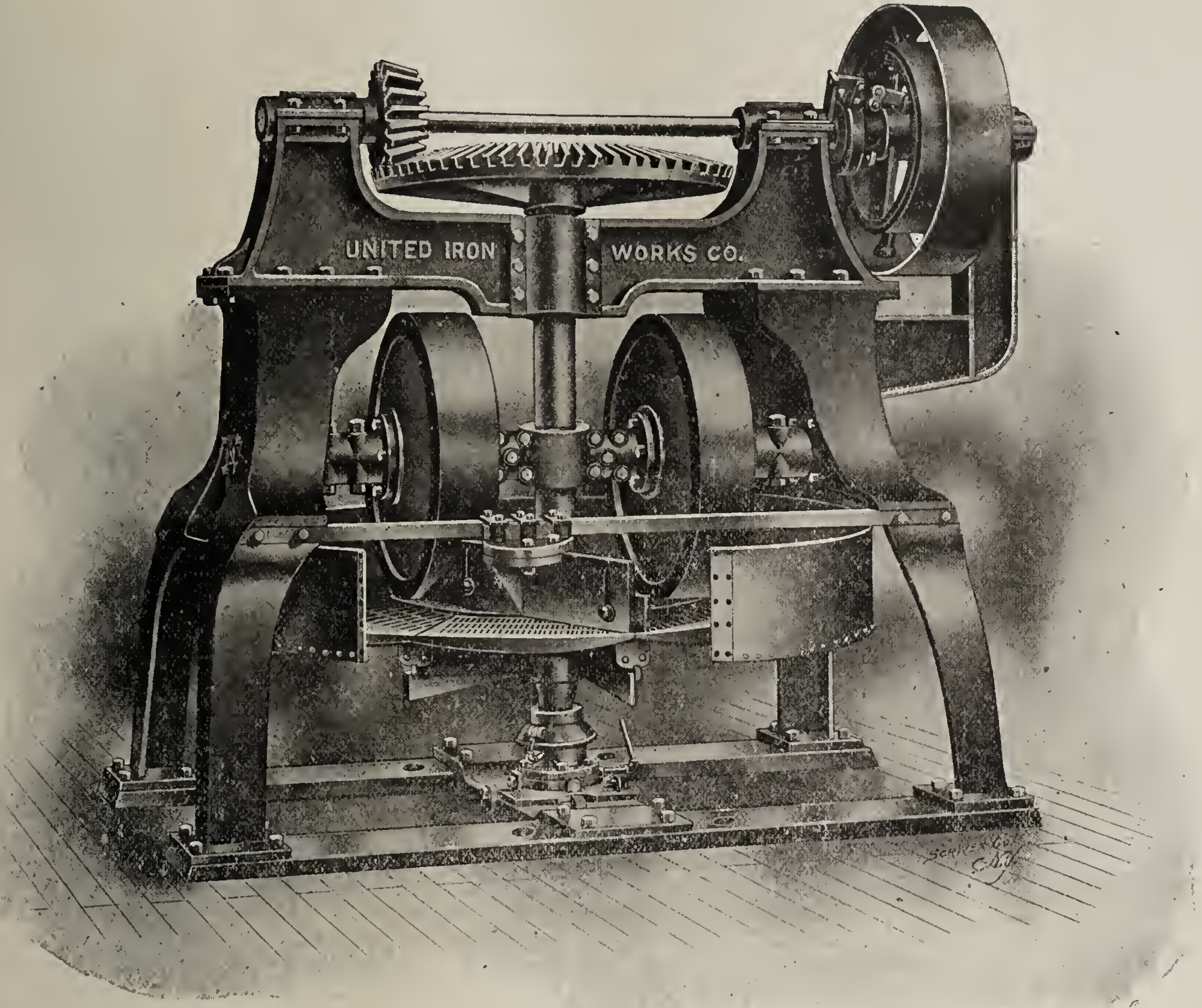
Wet Pans



Dry Pans

The TURNER VAUGHN & TAYLOR CO.

Cuyahoga Falls, Ohio, U. S. A.


UNITED IRON WORKS CO.

Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

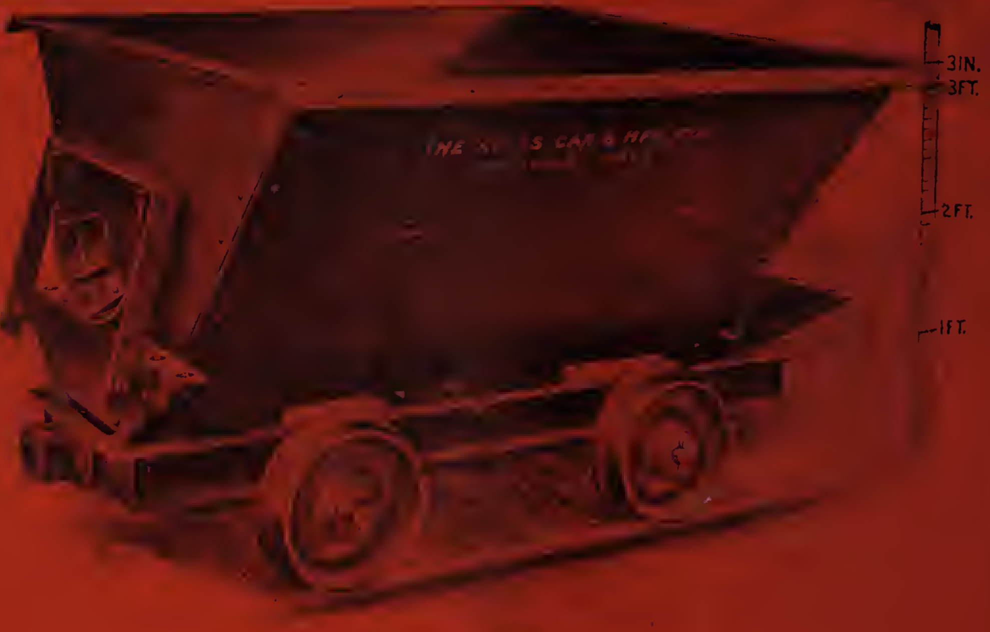
SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
CHERRYVALE, KAS.; KANSAS CITY, MO.

No. 217-E
Electric Side Dump Car

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bot[illegible] Dump Car, with trip a[illegible] brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.



NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.
CLEVELAND, OHIO

VOL: 34 No. 8

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
— TO THE —
CLAY · —
— · INDUSTRY ·

April 30, 1909

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The Youngren Continuous Gas Fired Kiln

As installed at Omaha, Nebraska

We are now ready to furnish licenses for the building of the Youngren Continuous Gas Fired Kiln.

The great labor saver, and the wonderful fuel saver. It will give you a profit while your competitor is selling at cost. He can't stand up against your 60 per cent to the good, besides the uniformity of burn obtained by no other method.

These claims are neither radical nor visionary, but susceptible of the highest proof and we are ready to give this proof to you.

The C. W. Raymond Company

Exclusive Licensees of the Youngren Patents

DAYTON, OHIO, U. S. A.

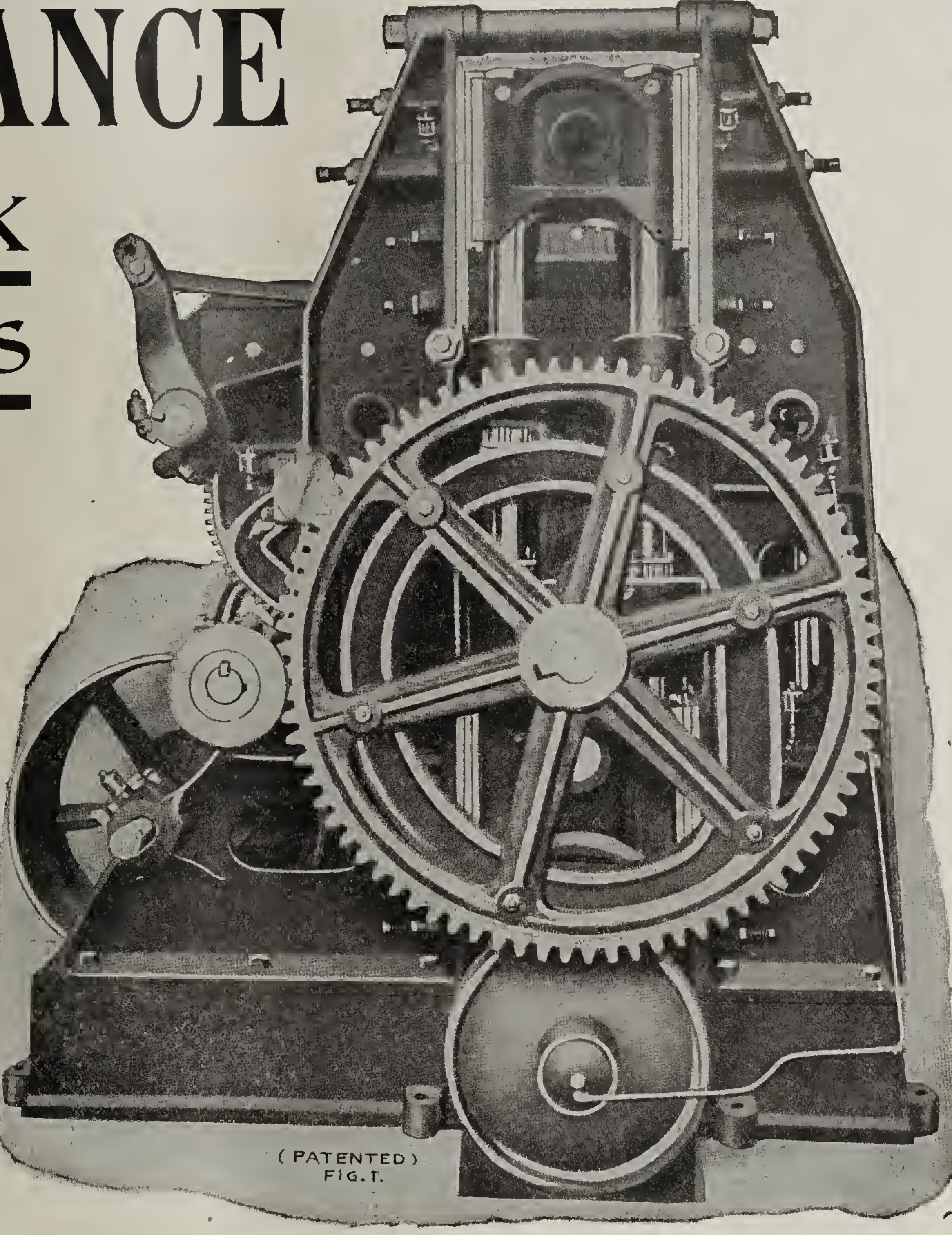
RELIANCE

BRICK PRESS

The Only Machine Making Brick Without Granulated Centers

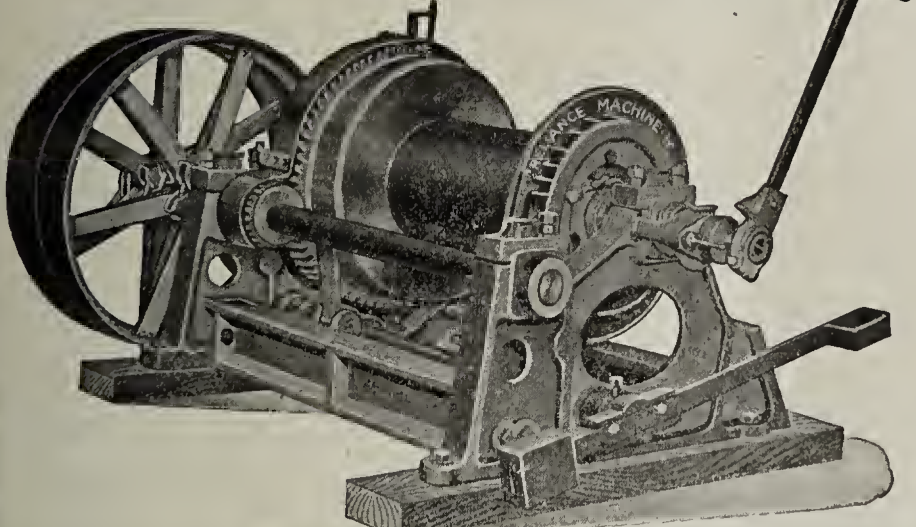
No Toggles
Powerful
Simple

We Design and Equip Dry Press Brick Plants Complete



(PATENTED)
FIG. I.

Improved Reliance Friction Drum Hoist



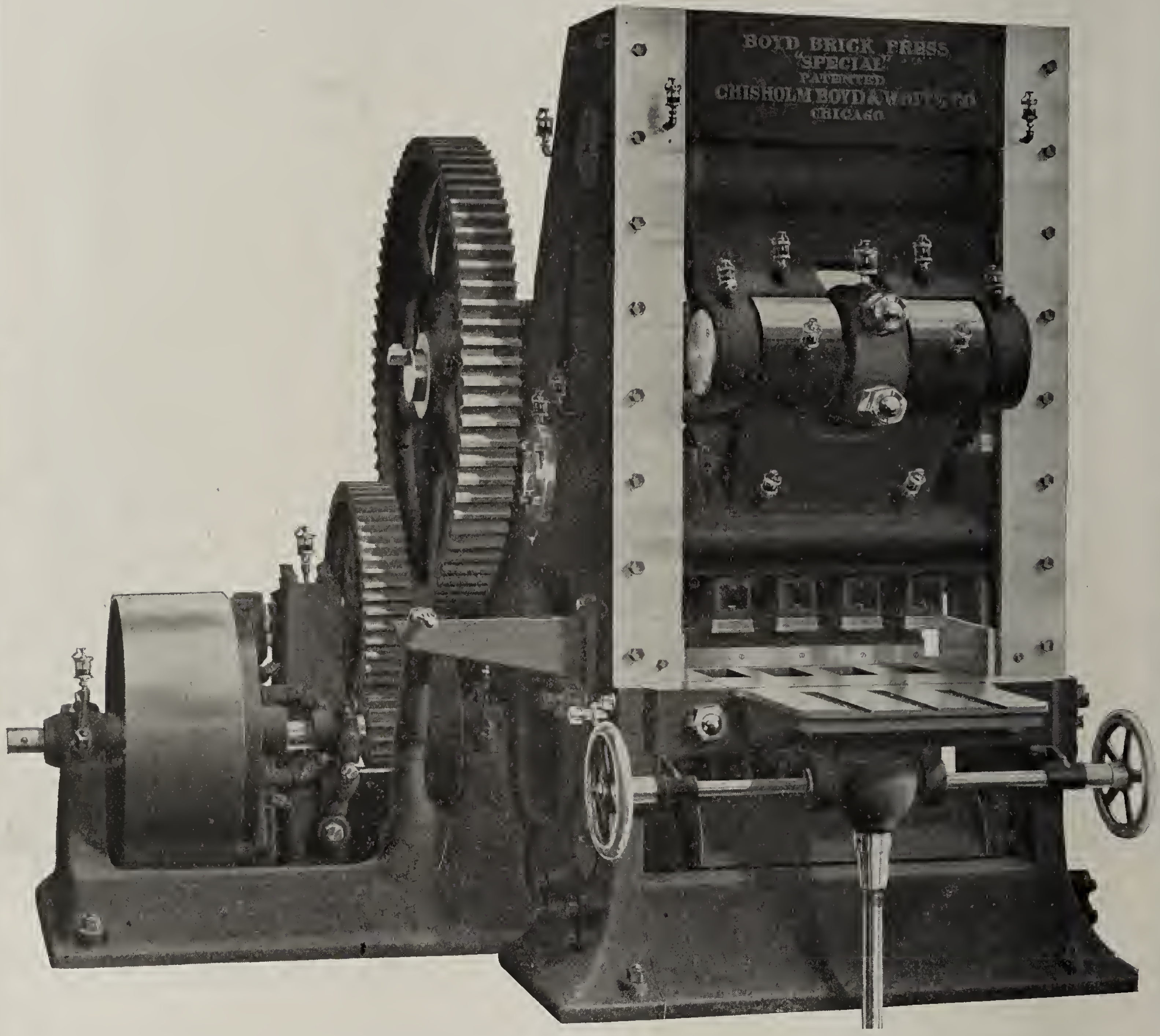
STEAM OR BELT DRIVEN

Specially Adapted to Service in Clay Plants

RELIANCE MACHINE and TOOL WORKS, St. Louis, Mo.

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

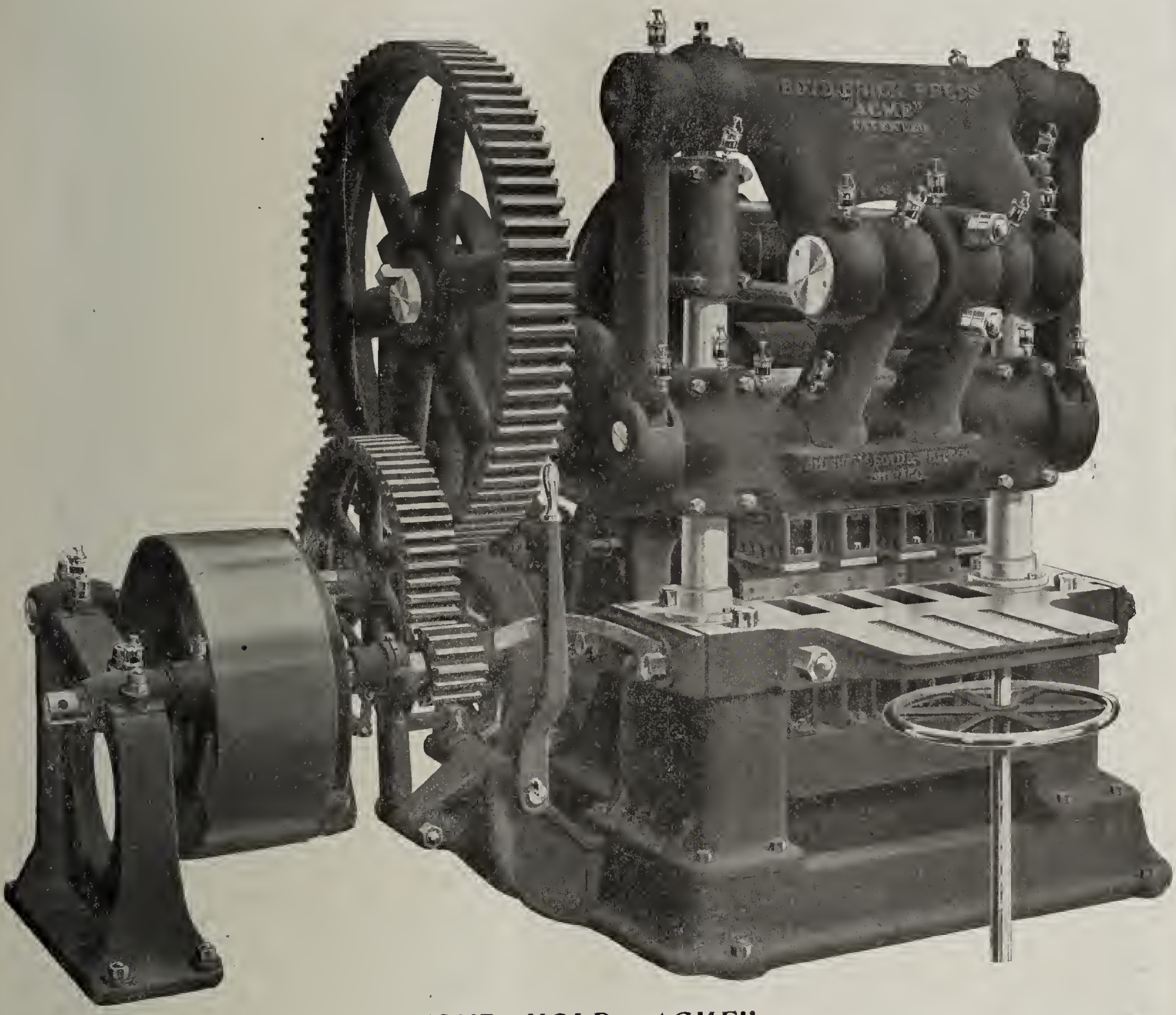
The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

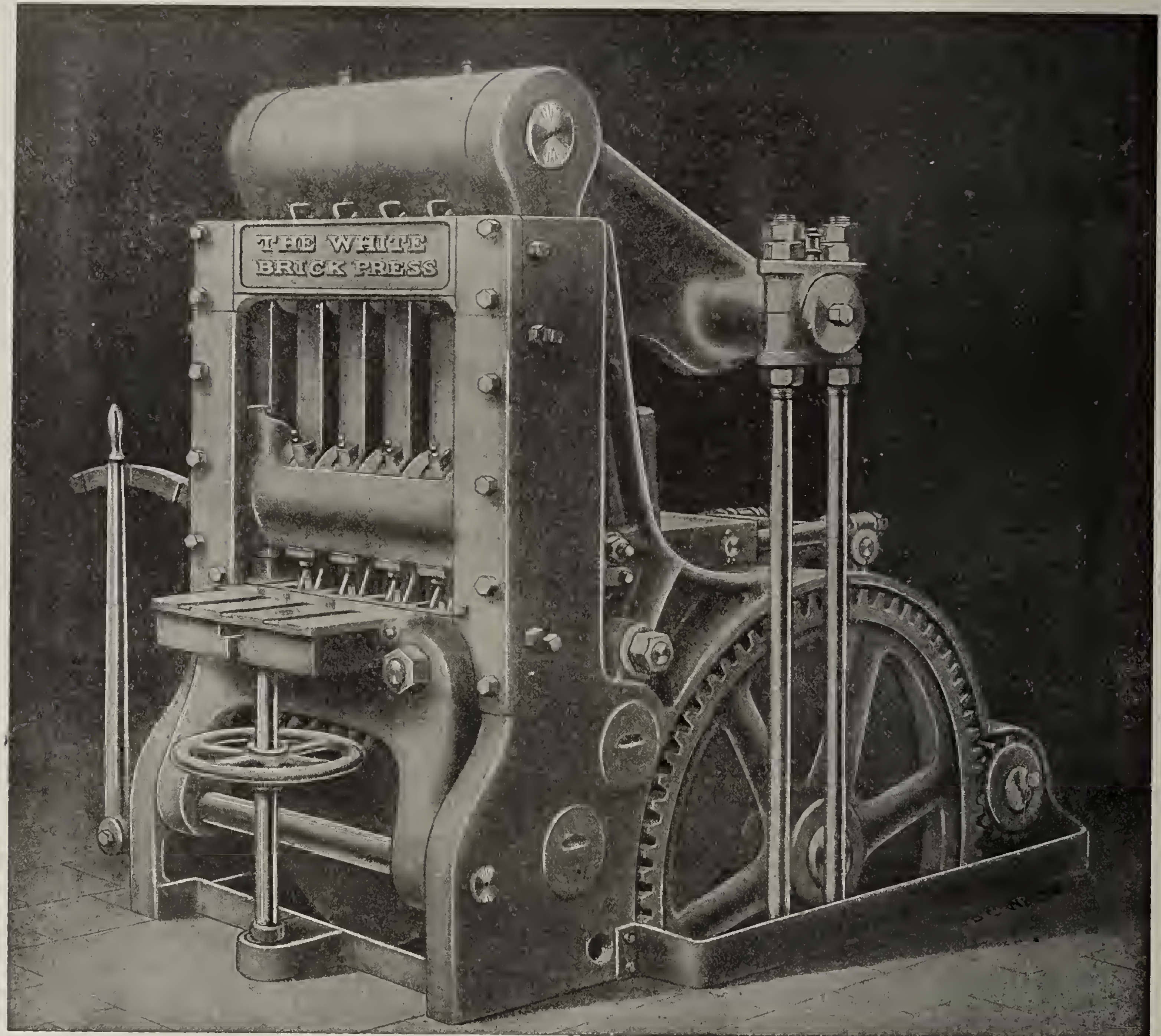
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS **CHICAGO, ILLINOIS**

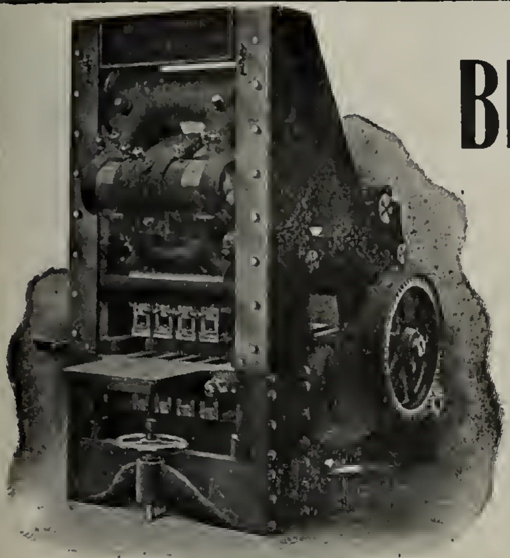
ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

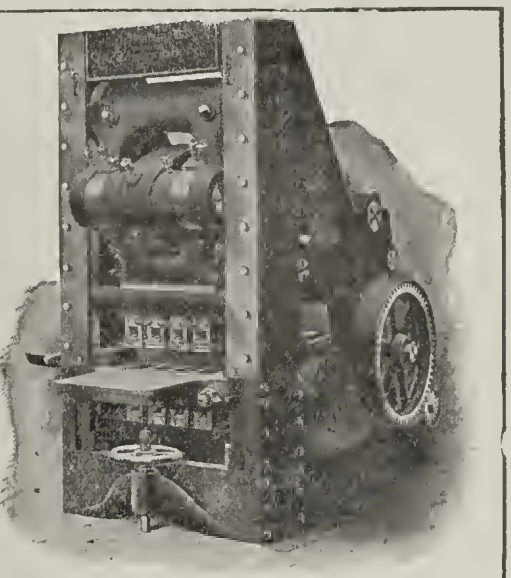
SEND FOR CATALOGUE

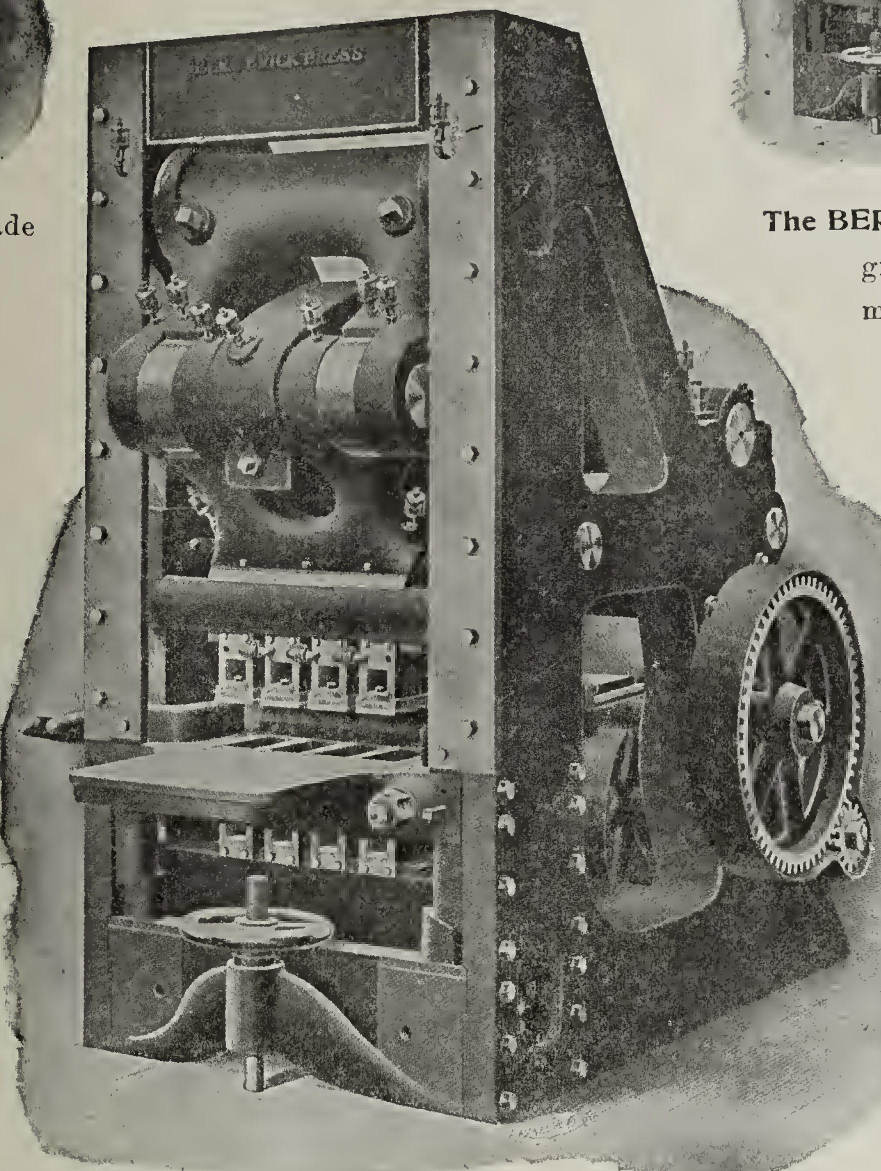
CHICAGO BRICK MACHINERY CO.
1308 GREAT NORTHERN BUILDING, CHICAGO



BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.





The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

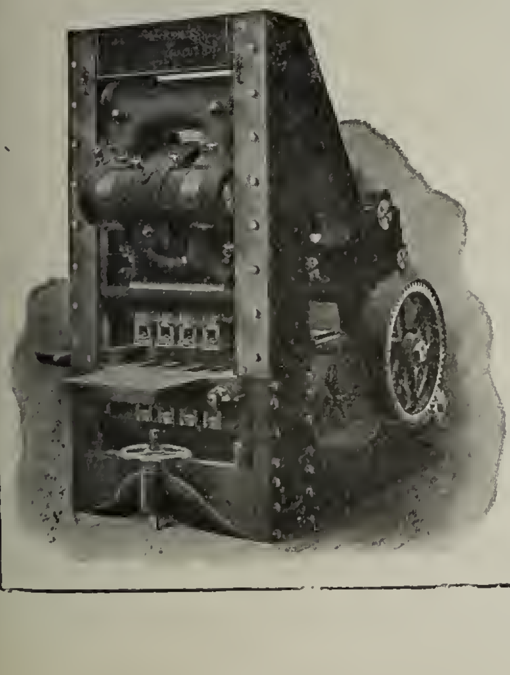
First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.



The 1905 Berg Press

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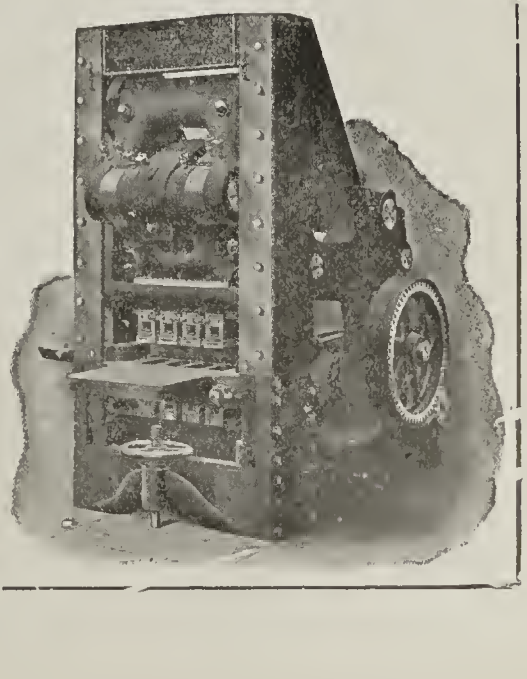

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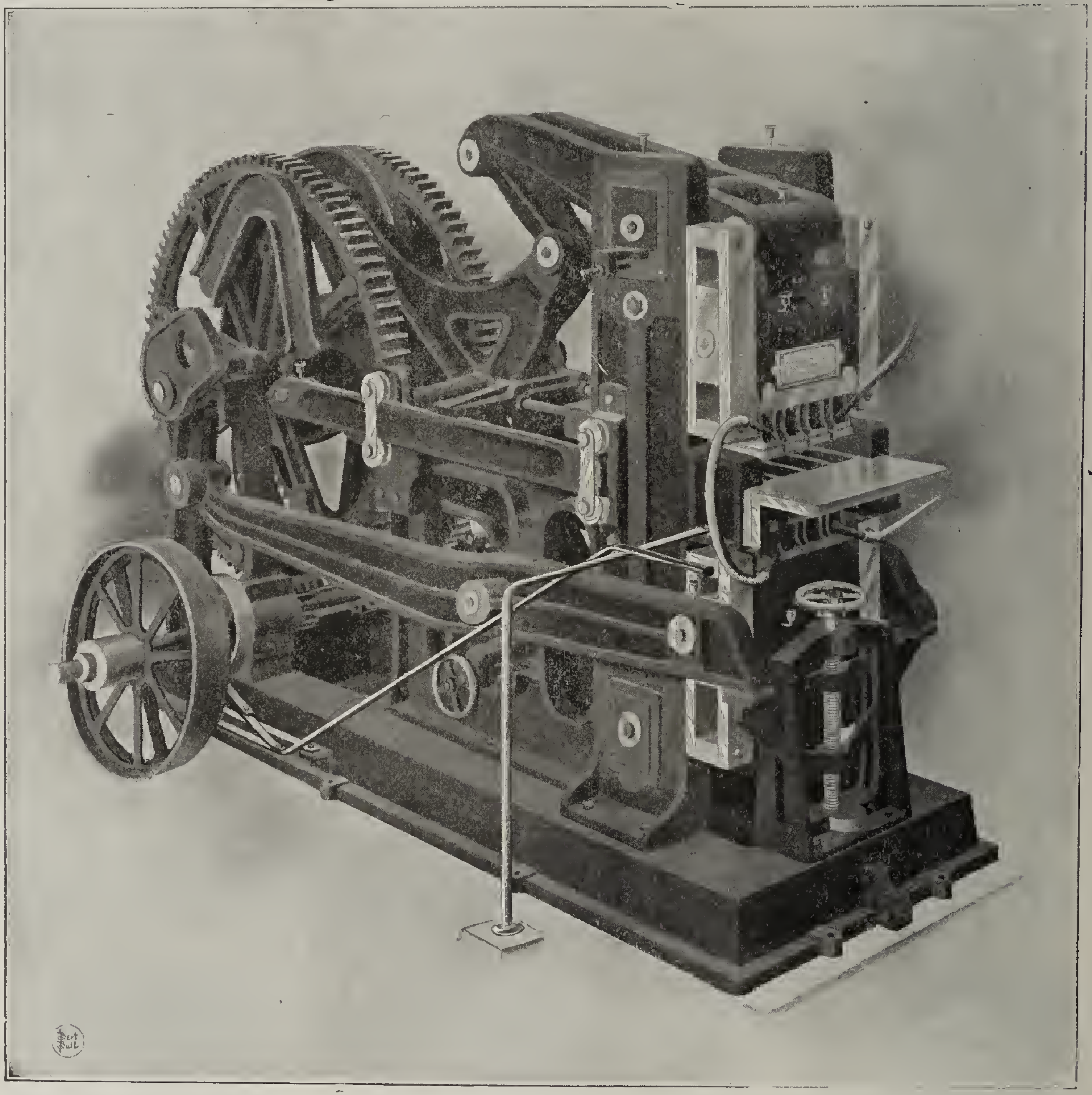

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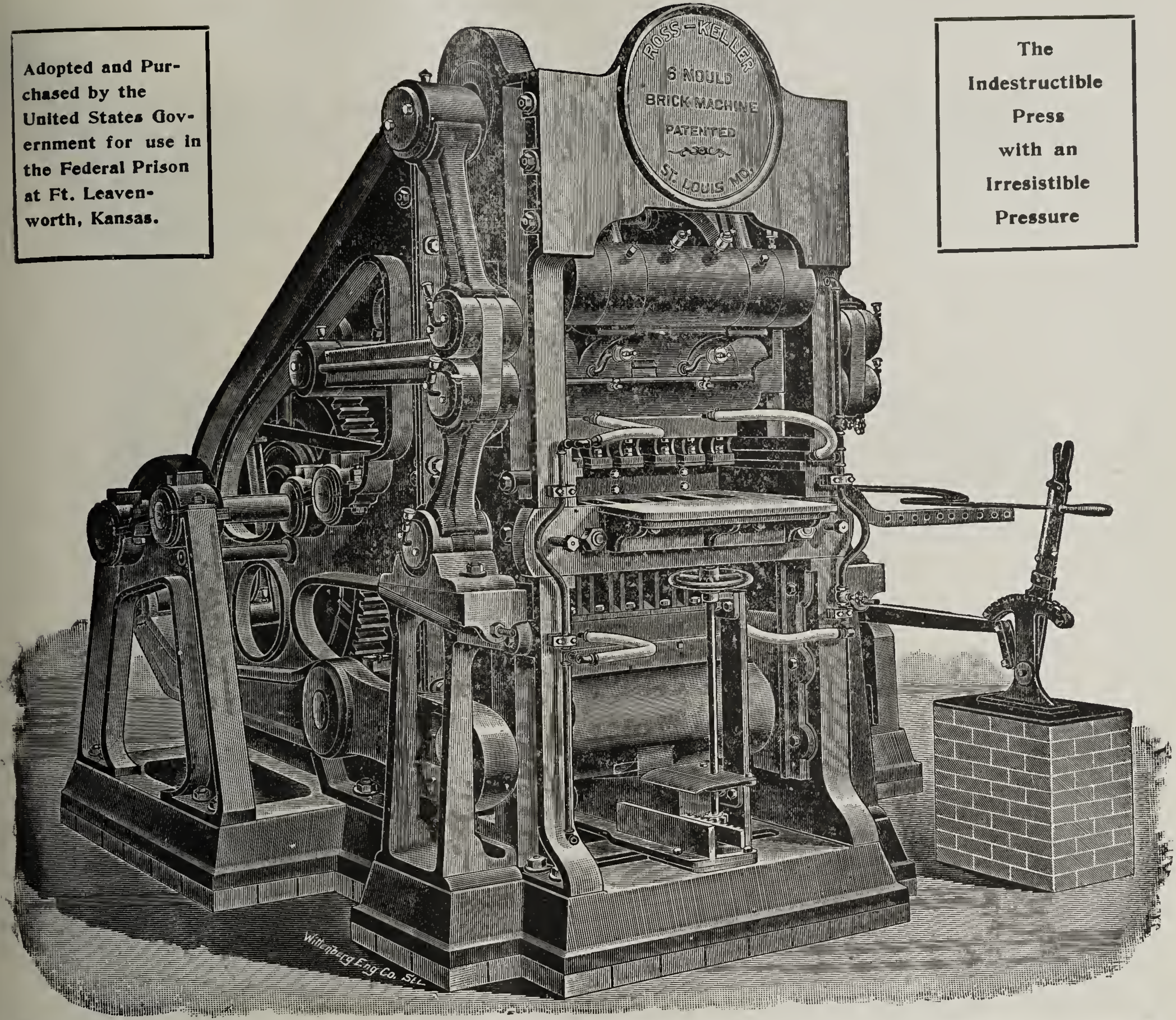

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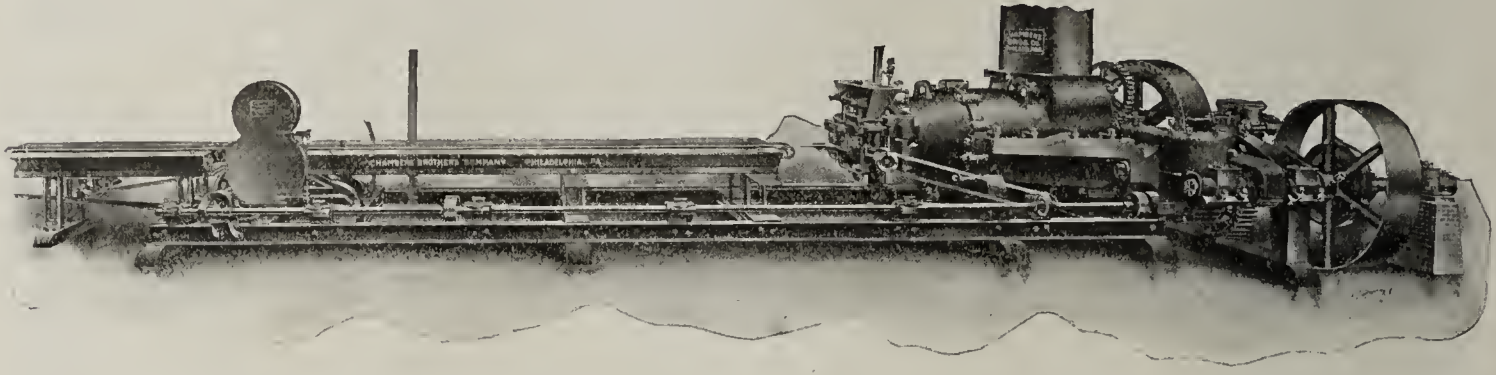

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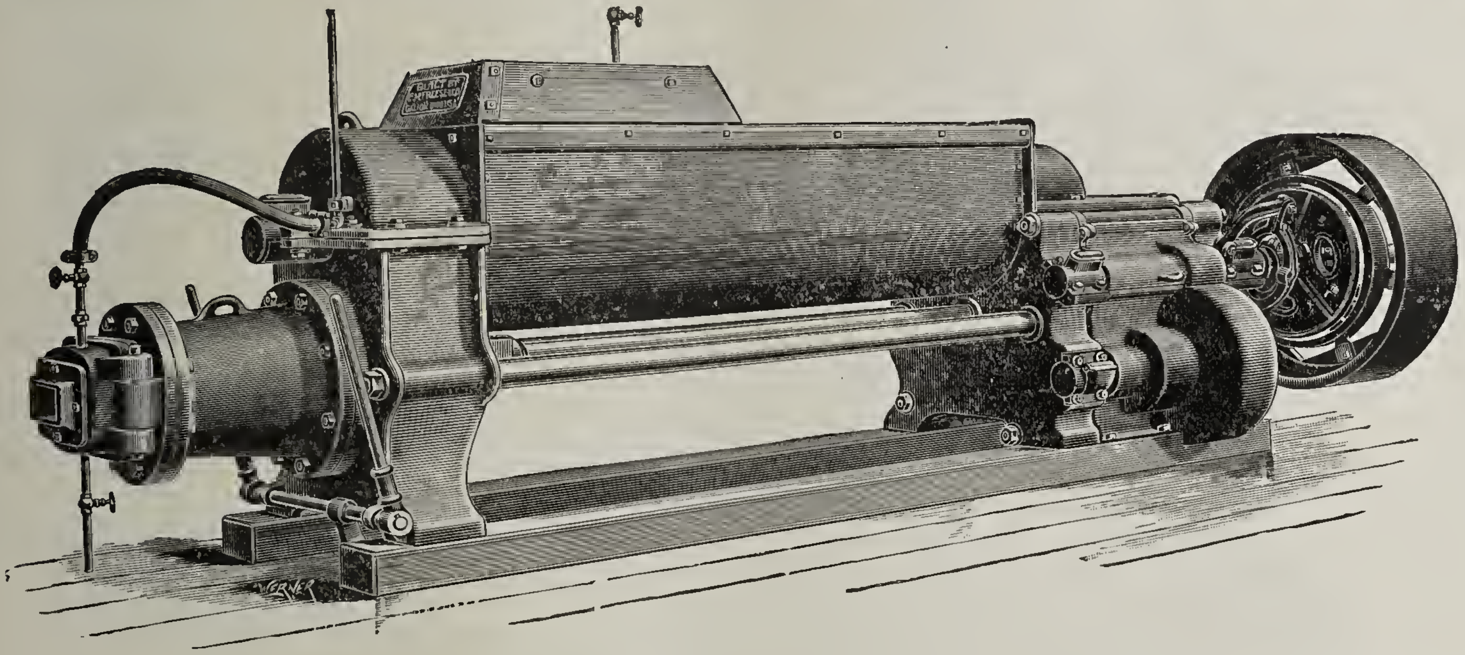

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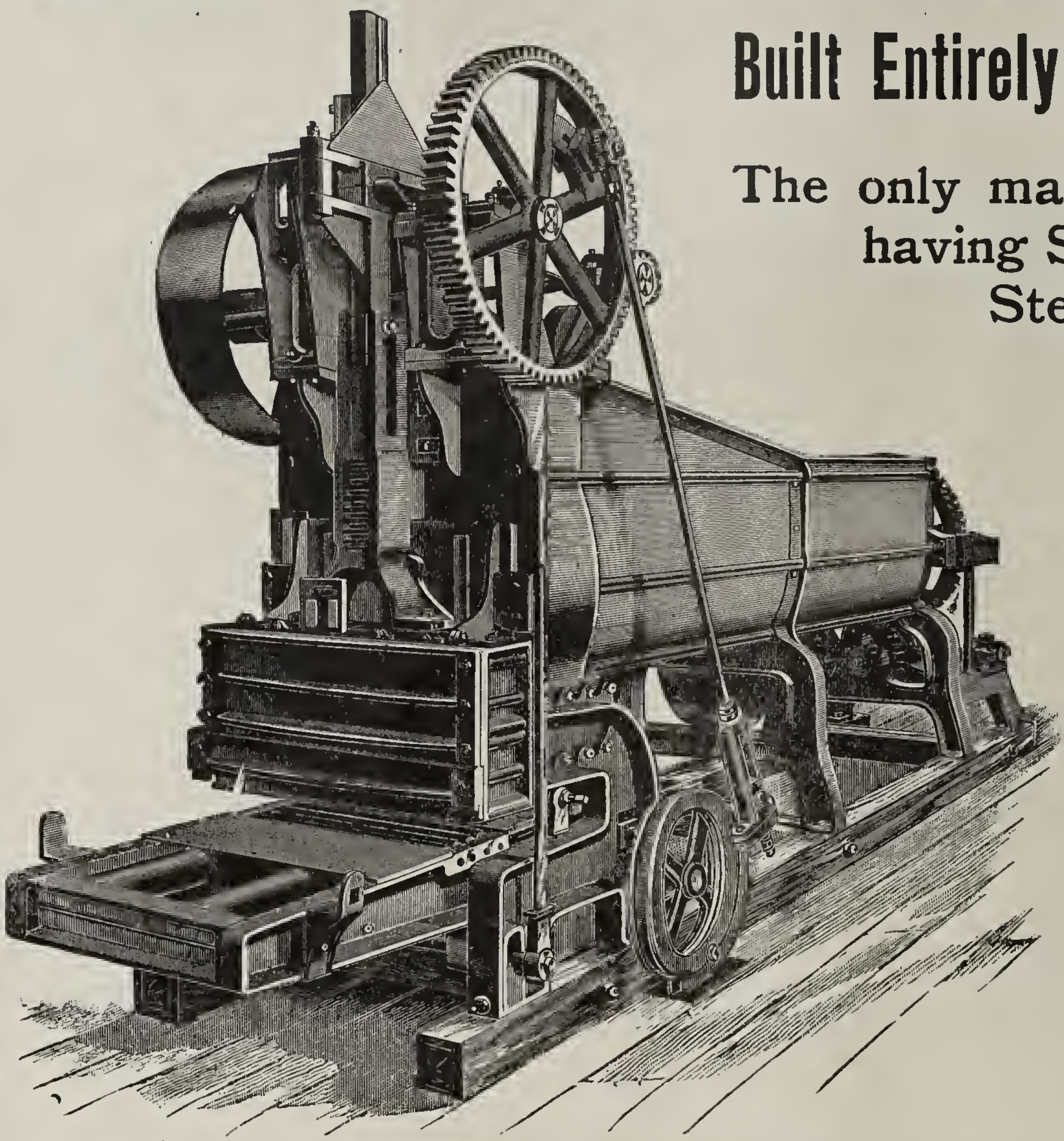

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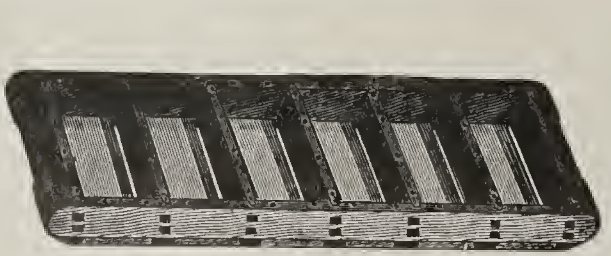

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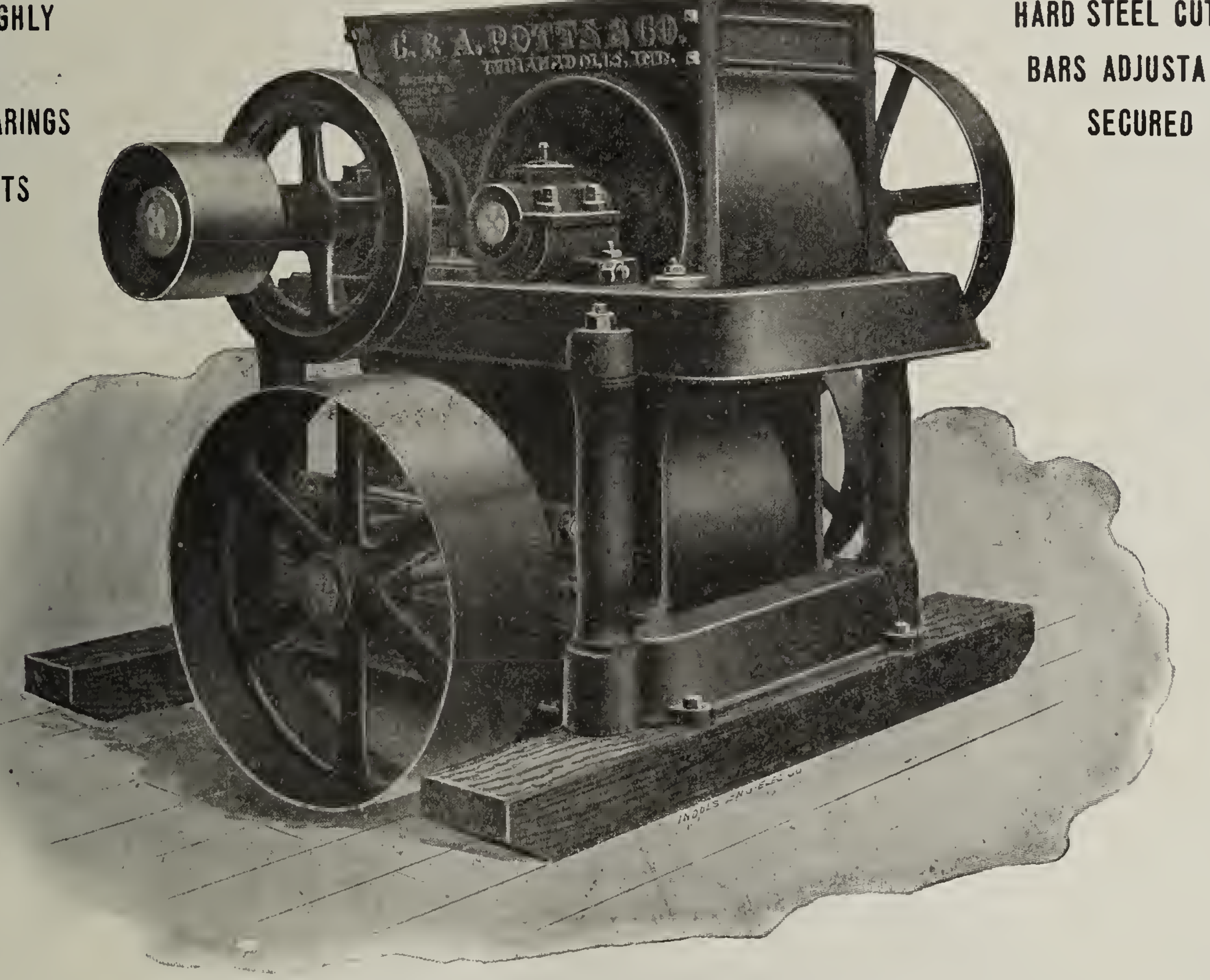

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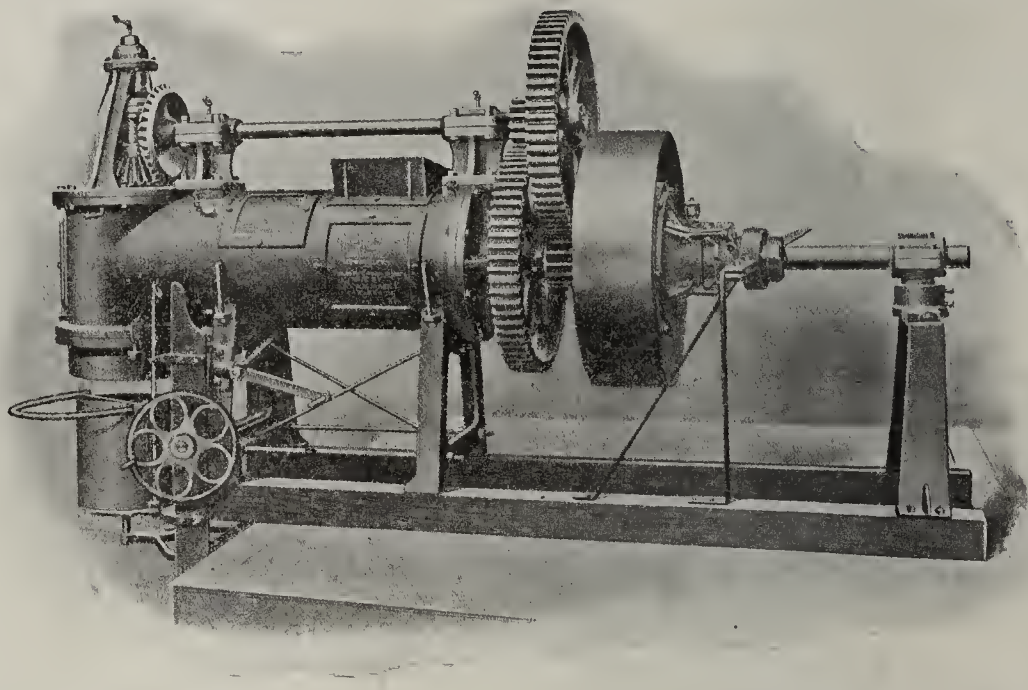

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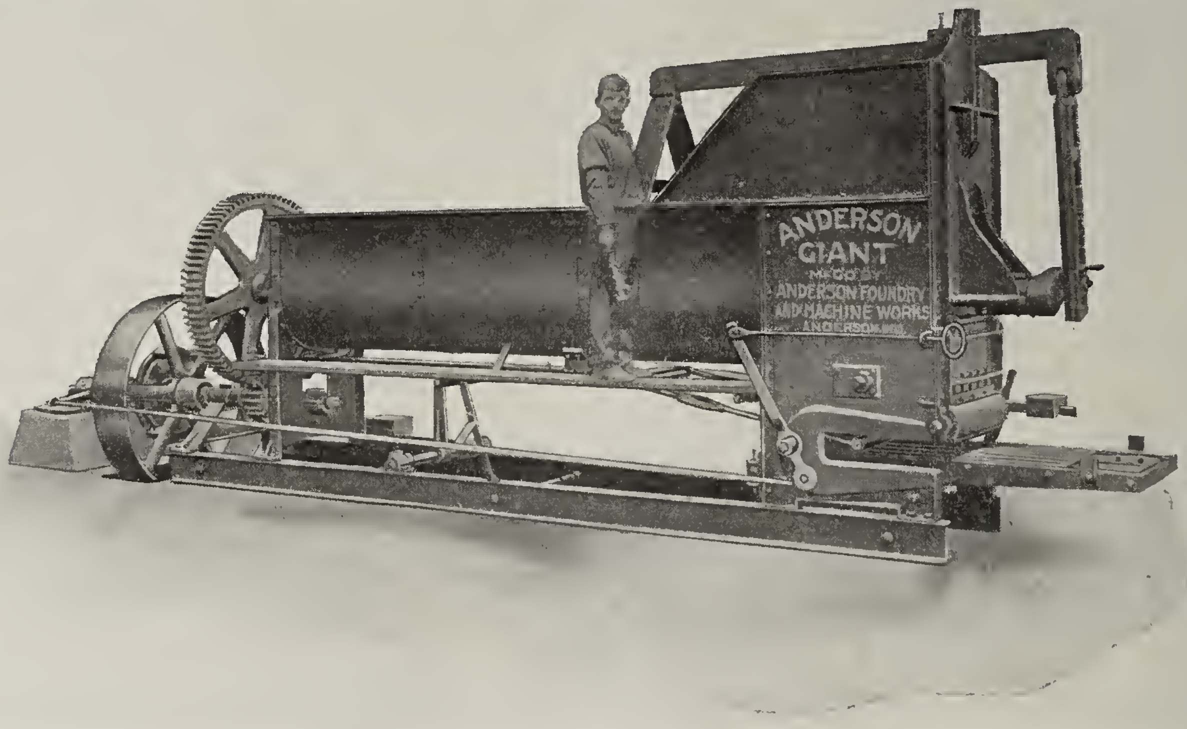

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HOISTS

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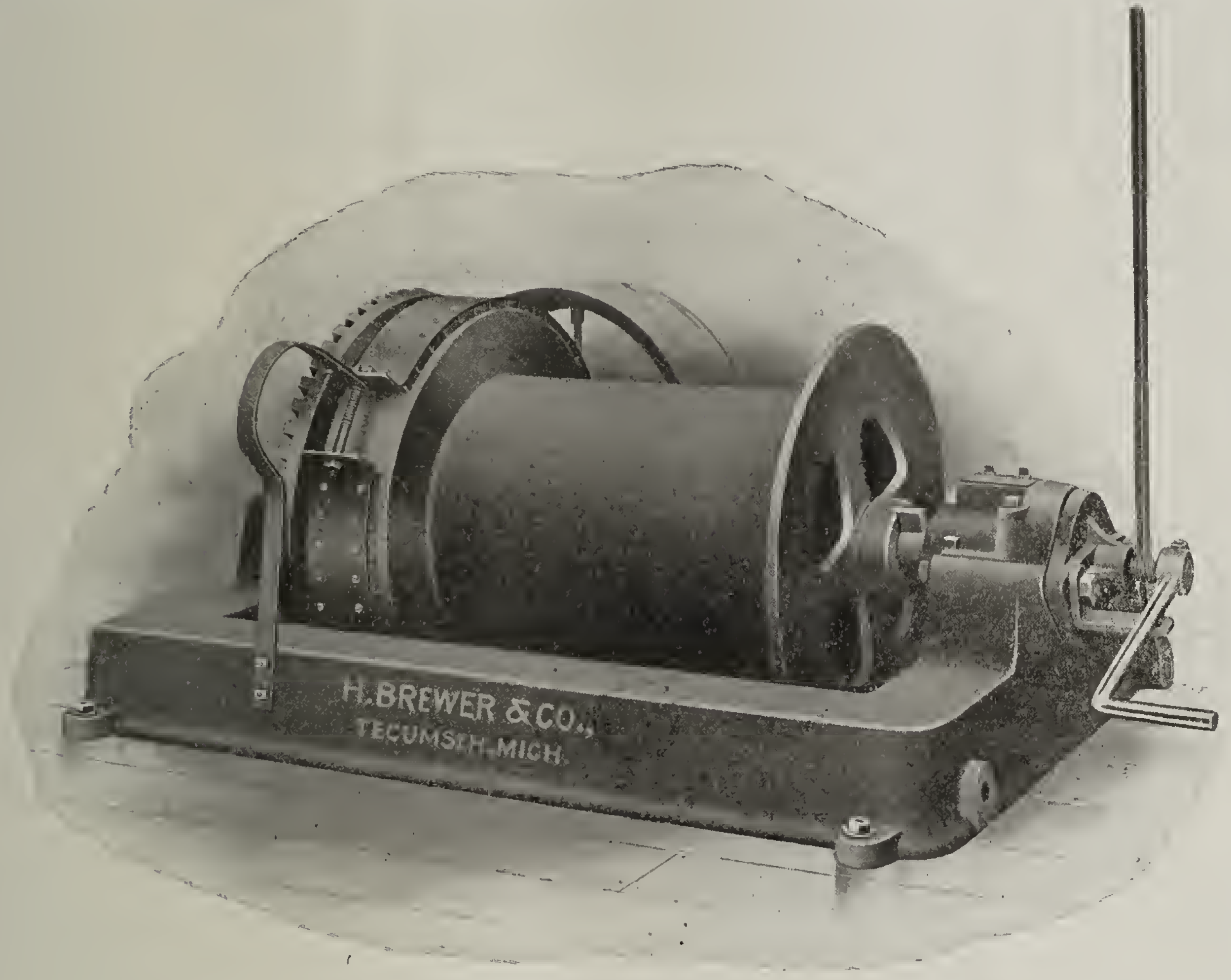

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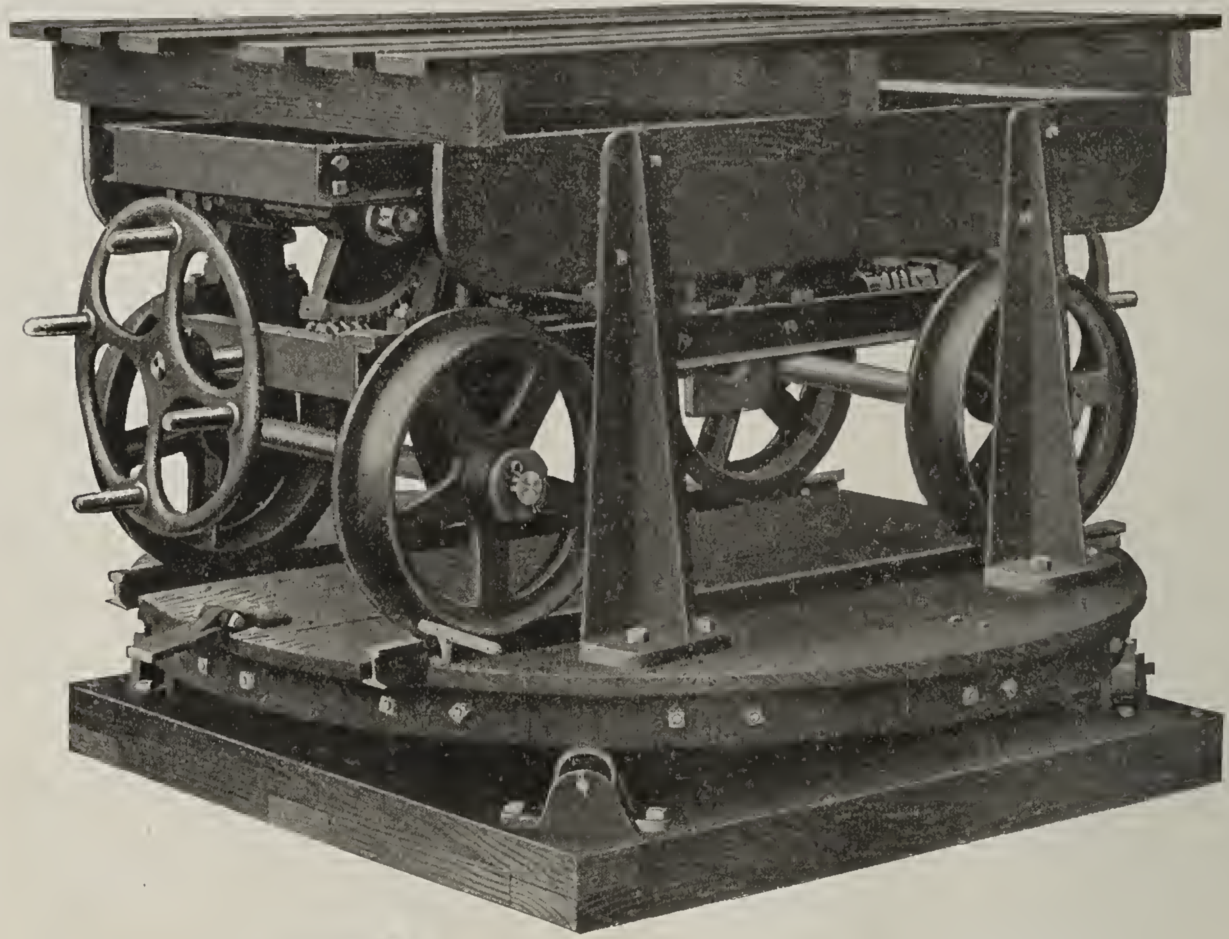

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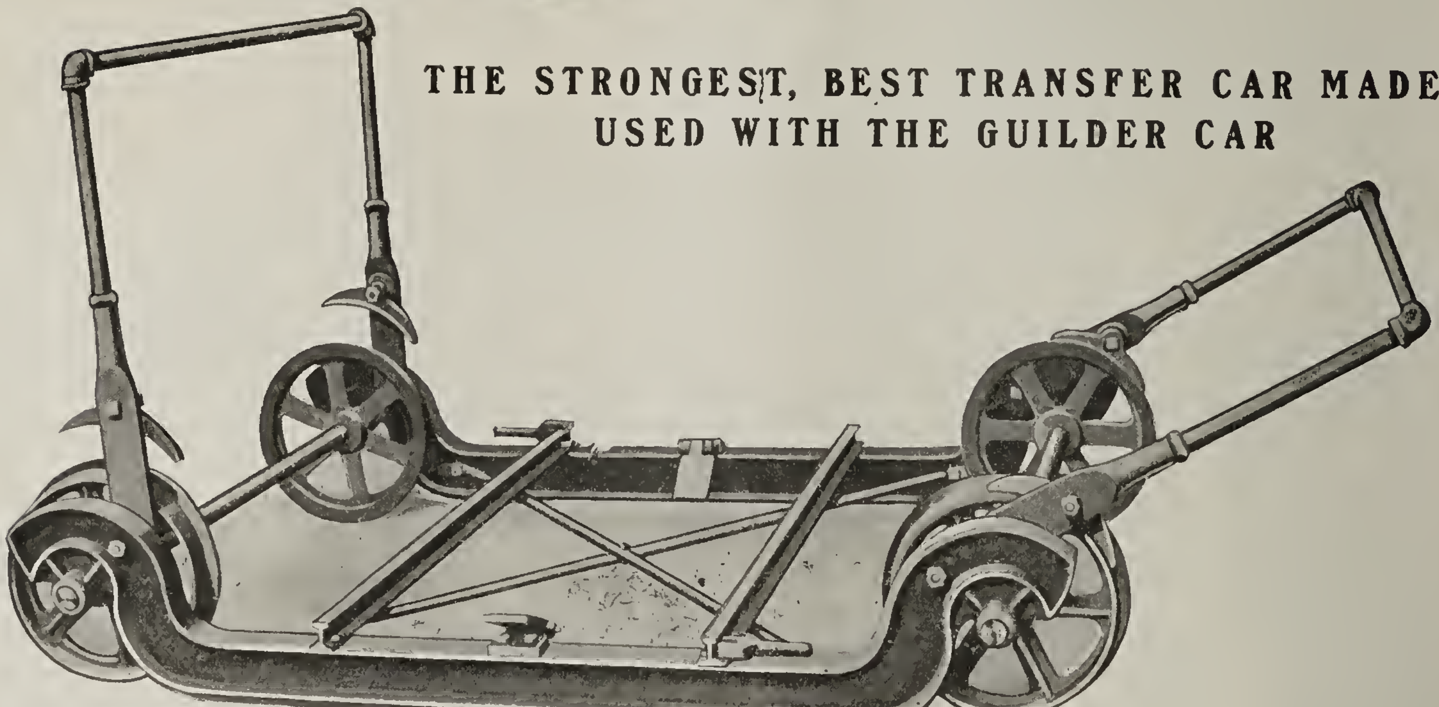

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CLAY RECORD

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SETTING BRICK BY MACHINERY*

By R. C. Penfield Pres. and Gen. Mgr of the American Clay Machinery Company, of Bucyrus, O,

Mr. Buckles, whom all attending the convention at Columbus, Ohio, will remember most pleasantly, presented a very interesting paper upon this subject last year.

He predicted that before the flowers bloomed in the spring in Kansas, his company would be setting stiff mud brick by machinery, and we very much regret that Mr. Buckles is not present to make a report in person.

After the convention last year the writer visited the plant of the Coffeyville Vitrified Brick & Tile Co., where this machinery is in operation, in the interests of the American Clay Machinery Co., of Bucyrus, Ohio, and being thoroughly satisfied of the advantages possessed by this method of mechanical brick setting, made on behalf of our company an arrangement with the Francis Brothers for the sole right to manufacture and sell the Francis patented apparatus for handling and setting brick, as well as the sole right to license others to use this apparatus.

Because of this arrangement and Mr. Buckles' inability to be present, the writer has been requested to make this report.

During the past year our company has been engaged in developing the brick setting apparatus and endeavoring to adapt it to the varying capacities and conditions of brick manufacture.

In designing new plants we are so arranging them to secure the greatest possible results from the brick setting and handling system.

As many of those present have already examined these machines on exhibition at the Convention Hall, we will not attempt to give any detailed description of this machinery, more than to state the broad principle upon which it operates, which is, namely: Building up unit stacks or brick in a prearranged order—with the bottom courses spaced apart—then in lifting and transporting this unit stack of brick by a pinching strain exerted upon and between the bricks of the basic layer and lifting and transporting the entire stack intact, depositing this unit stack and disengaging the apparatus therefrom without disturbing the stack formation.

This invention has been covered by a broad method patent as well as apparatus patents and forms the foundation for to these stacks of brick. He then moves the crane and the improvements in brick making, which we believe are destined to have a far reaching and very beneficial influence on this great industry.

The fact that bricks have been set in the kiln by hand so many hundred years, while other departments of the manufacturing have been so highly developed, makes the changes now to come all the more interesting and important.

We have prepared slides for the stereopticon which will show the machines in use, setting both stiff mud and dry pressed brick. We shall first look at the setting of wire cut brick.

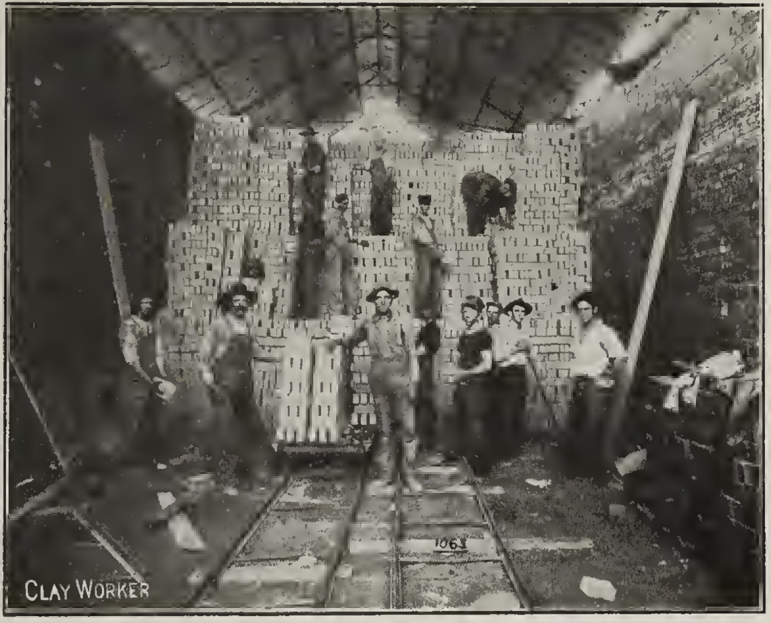

Fig. 1. Gang Hand-Setting Brick

This first picture represents the hand setting gang in one of the kilns of the Cherryvale plant, taken just before the introduction of the brick setting machine. The men, as you will note, are not setting brick but are having their pictures taken. This gang consists of fifteen men, including the men who sand the brick (for they are setting paving brick in this kiln), and the two men who transfer the cars of brick from dryer to kiln. Please notice the irregular appearance of this brick setting, in order to contrast it with the next picture.

No. 2. This slide represents the interior of a kiln, in which you will observe a traveling crane has been erected and upon which an operator has been located, whose duty it is to pick up the unit stacks of brick from the dry car by the aid of the men who adjusts the brick setting machine brick to the face of the kiln where a man in attendance, who is called the "Spotter," spots, or properly locates these brick, and then disengages the setting machine therefrom.

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*A paper read before the Twenty-third Annual Convention of the National Brick Manufacturers' Association, Rochester, N, Y., Feb. 1-6, 1909.

You will observe the dryer car has been run into the kiln, and already three stacks of brick have been removed from this car; one is just now about to be set by the operator, who is located on the second bench of the kiln. The crane and setting machine in use are adapted only to handling about 100 to 120 bricks at a time, consequently a stack of brick half the length of the car is handled at a time. As there are three rows of brick on a car, it thus takes six lifts to empty the car. It takes about forty seconds to engage the brick with the setting machine, lift the brick from the car and properly set the same in the kiln and then return the setting machine to the dryer car for its next load.

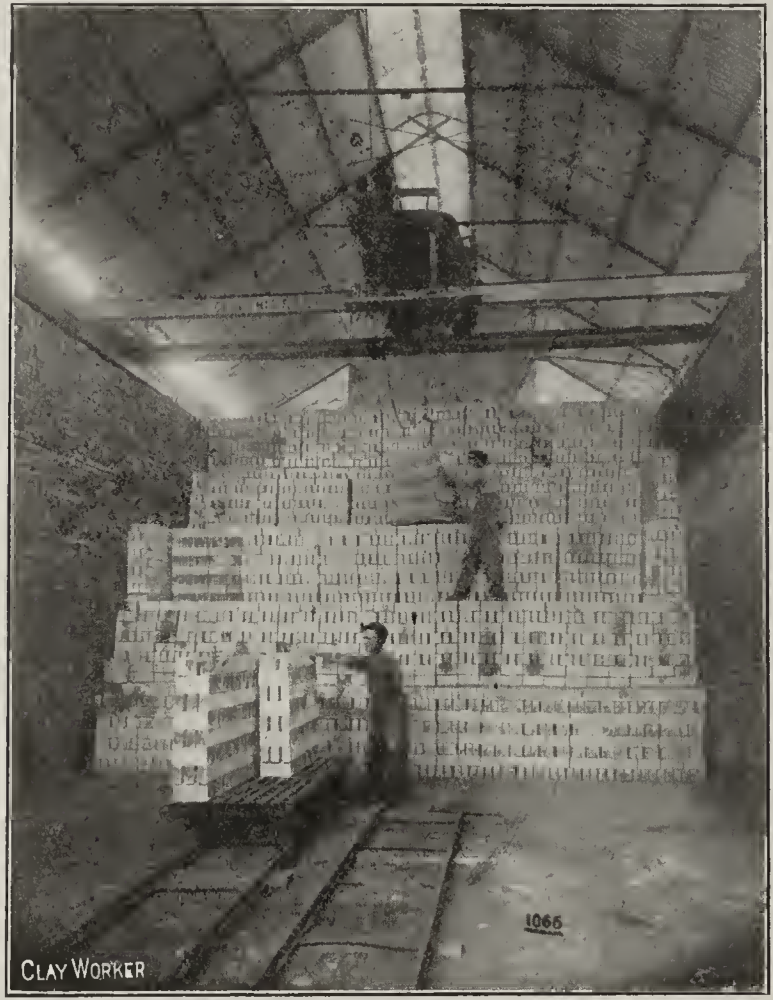


Fig. 2. Setting Brick by Machinery

This apparatus, when working, operates at the rate of 120,000 bricks per day, lifting these small loads, and the ordinary day's work of 80,000 to 90,000 brick is placed in the kiln very easily with, of course, considerable time when the crane is not in continuous operation.

No. 3. In picture No. 3 you will observe that the operators are setting arches. The lower portion of the arch is composed of one of the unit stacks which you observed on the car in the last picture.

These are properly located to form the arch and then a cap piece is put upon the arch, as shown in this picture, fully completing the arch without any hand-setting of brick. These arches are built on the cars at the machine, the brick being taken directly from the belt. The men soon become familiar with this work, and no loss of time or extra expense is involved in making these arches.

The setting and handling of stiff mud brick, as shown by these pictures, and has been accomplished without difficulty and, in fact, with greater ease and facility than the setting of the dry pressed brick, which was first undertaken by this company.

Upon the size of the setting machine and the size of the crane depend the capacity which it is possible to secure by the system. There is no difficulty in arranging the machines to lift 500 or 100, or even a much larger number of brick, and by this means it is possible, with a single equipment, to set 200,000, 300,000, or even a larger number of brick, per days of ten hours.

We will now rapidly look at the views showing the manufacture, transfer and setting of dry-pressed brick, which are shown in the following seven views:

A few years ago the cement manufacturers, broadcast throughout the land, heralded the coming of Age of Cement. Having attracted the attention of the public, these same manufacturers soon changed their cry.

They now say, the Age of Cement is not coming, it is here. So we say setting brick by machinery is not coming, it is here, and we verily believe, here to stay; and why should it not be so? We have all watched the rapid development in every other department of brick manufacture. The steam shovel, that wonderfully improved machine, the automatic cutters, the kilns and dryers of greatly improved efficiency, have all contributed under wise and experienced management to produce this result.

While this development has been taking place, the millions and billions of brick required in building up this vast country, have been set and rehandled by human brawn with little hope that machinery would successfully perform this service.

Nearly all great inventions are marked by simplicity. This invention certainly has the mark of greatness, for it is exceedingly simple, and we fully believe that the problem of successfully setting brick by machinery has been solved.

Mr. Houston, of New York, has pointed to the great results obtained by the cement manufacturers in thoroughly and intelligently advertising their product. We fully believe we can learn much from this example, but let me point out another lesson the brick manufacturers can learn from the cement manufacturer.

If every brick manufacturer here has not visited one of the new thoroughly modern cement plants, he should do so at his first opportunity. We believe there is a great lesson to be learned here. We must admit our own surprise in visiting recently the plant of the Western States Portland Cement Company, of Independence, Kan. We were taken through the plant by Mr. A. C. Stiech, the treasurer of this company, who is also the president of the Coffeyville Vitrified Brick & Tile Company.

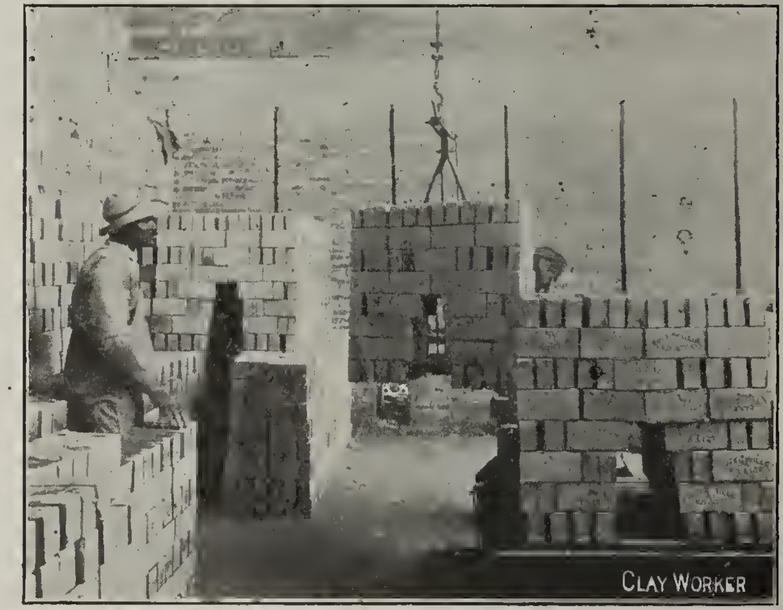


Fig. 3. Setting Arch Brick Ready for Kiln

Here we found the highest grade of power plant, magnificent electrical installation, electrically driven machinery throughout the plant, with labor saving appliances in use wherever possible. Every effort has been made to reduce the cost of production and the cost of maintenance. After viewing this magnificent property and hearing Mr. Stiech explain the great advantages of building thoroughly with the best possible equipment, we finally ventured to inquire, Why is it, Mr. Stiech, that you build such a magnificent cement plant and yet consider any old equipment building or construction good enough for a brick plant. We are pleased to record that Mr. Stiech went on record as having been for years an advocate of high grade construction for brick works.

Now, it so happened that this company with which Messrs. Charles and W. H. Francis are also connected, were just about moving an old plant from Kansas to Oklahoma, where it was intended to install the old equipment again. We found that this would be a good time to put some of the good equipment, good construction and all labor saving and fuel economizing appliances into operation. Without going into further detail, let me say that our company designed and are supplying this equipment for a very modern plant, every effort being made to save labor and fuel and cost of maintenance.

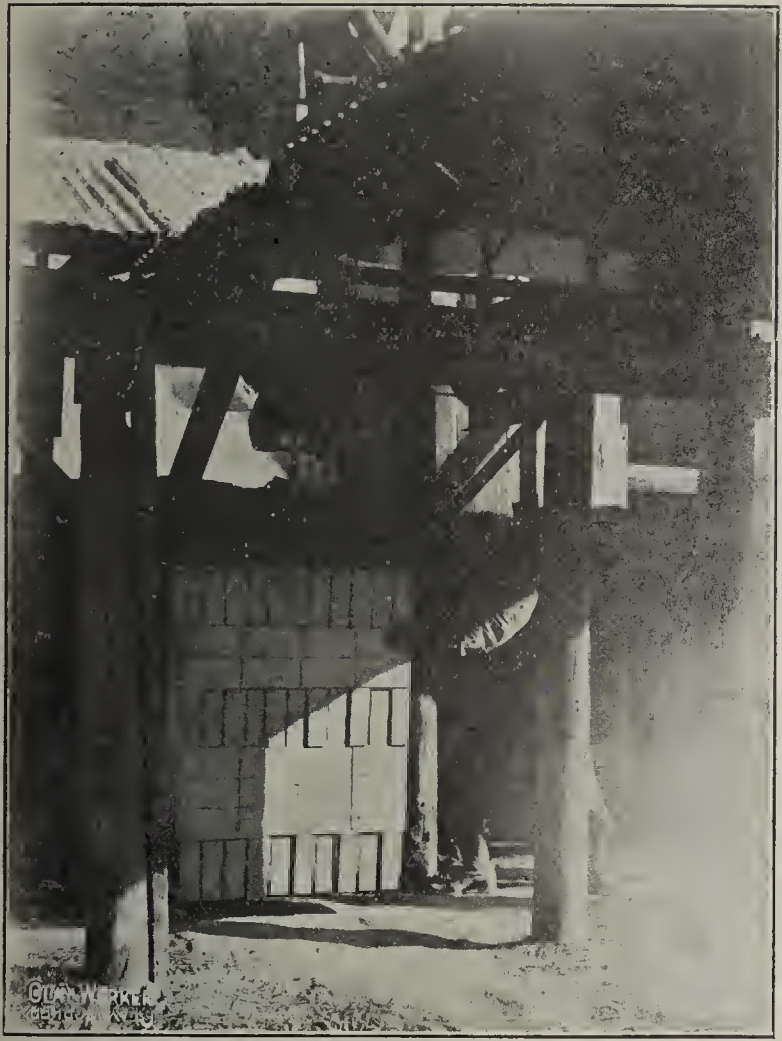


Fig. 5 A Unit of Brick Going to Kiln

The building is made of brick with fire proof roof. There will be no insurance to carry. The brick will be set by the Francis Brick Setting Machine and burned in a continuous kiln for the purpose of saving fuel, although gas is now very cheap at Collinsville, Okla.

We believe that every brick manufacturer who rebuilds an old plant or constructs a new one should take into account the fact that cost of production, in the future, is going to be an even more important factor than at the present time, and a very vital question. With the handicap of the great cost of laying brick to compete with cement, every possible effort should be made to reduce the cost of production and thus increase the possible margin of profit.

We believe the plants of the future will be better built and should be fire proof, and should be designed with low cost of production and low cost of maintenance as prime factors. We also believe that plants of large output will be built. Here again, we can follow the cement manufacture to good advantage. The plants of large capacity make possible a lower cost of production. In these plants the brick setting machine will play an important part. On a plant of from 200,000 to 300,000 daily capacity, when properly arranged for, this entire output can be set in kiln with the labor of but three men, assuming that the brick have been delivered into the kiln shed from the dryer.

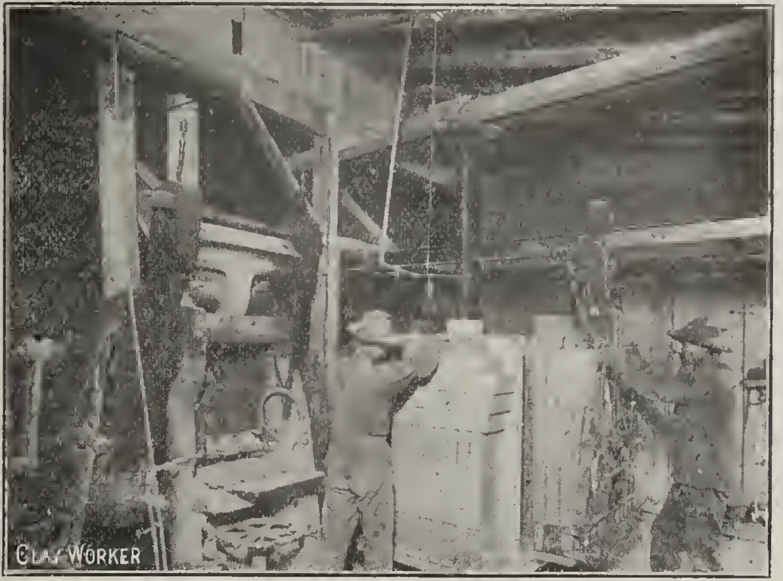


Fig. 4. Setting Cap Pieces for Arch

We fully believe that the time is now here when a manufacturer of brick can no more afford to build a new plant of large capacity, or where conditions are favorable, even to operate an old one, without providing a mechanical setting of brick, no more than he would be justified in starting such a large yard without a steam shovel or automatic cutter.

We believe firmly in the great future of the clay working industry—that the great deposits of clay and shale and coal have been placed there, out of which to produce the most perfect building material known to men. We heard yesterday from a gentleman on the floor of this Convention Hall, who, after fifty years of observation and experience, expressed the firm belief that cement would in the end be found wanting. We know that while the glories of the Roman Empire have departed, the good clay brick of which her buildings were constructed, are as good as ever, but I must bring this paper to a close, and thanking you gentlemen for your kind attention, let me express a sentiment in the following lines:—

Cement decays and crumbles,
Empires wane and pass away
But eternal everlasting
Are the bricks of well burned Clay.

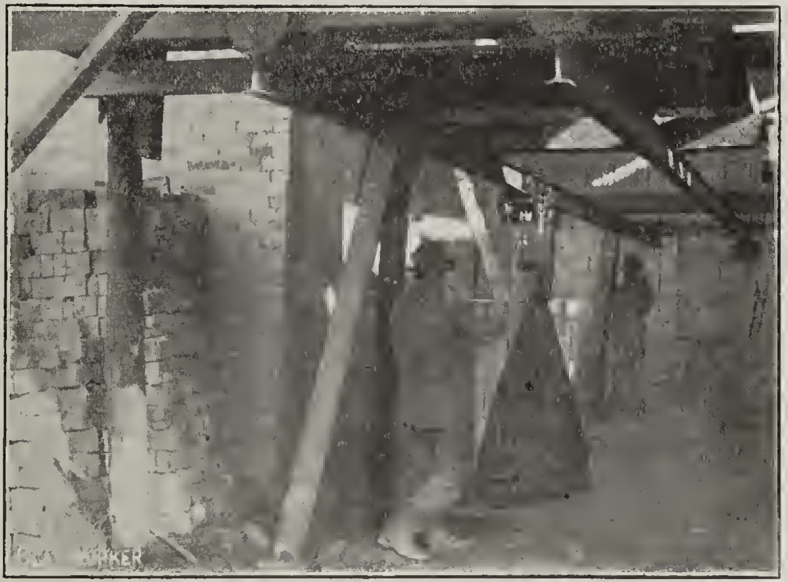


Fig 6. Showing Setting Machine and Trolley

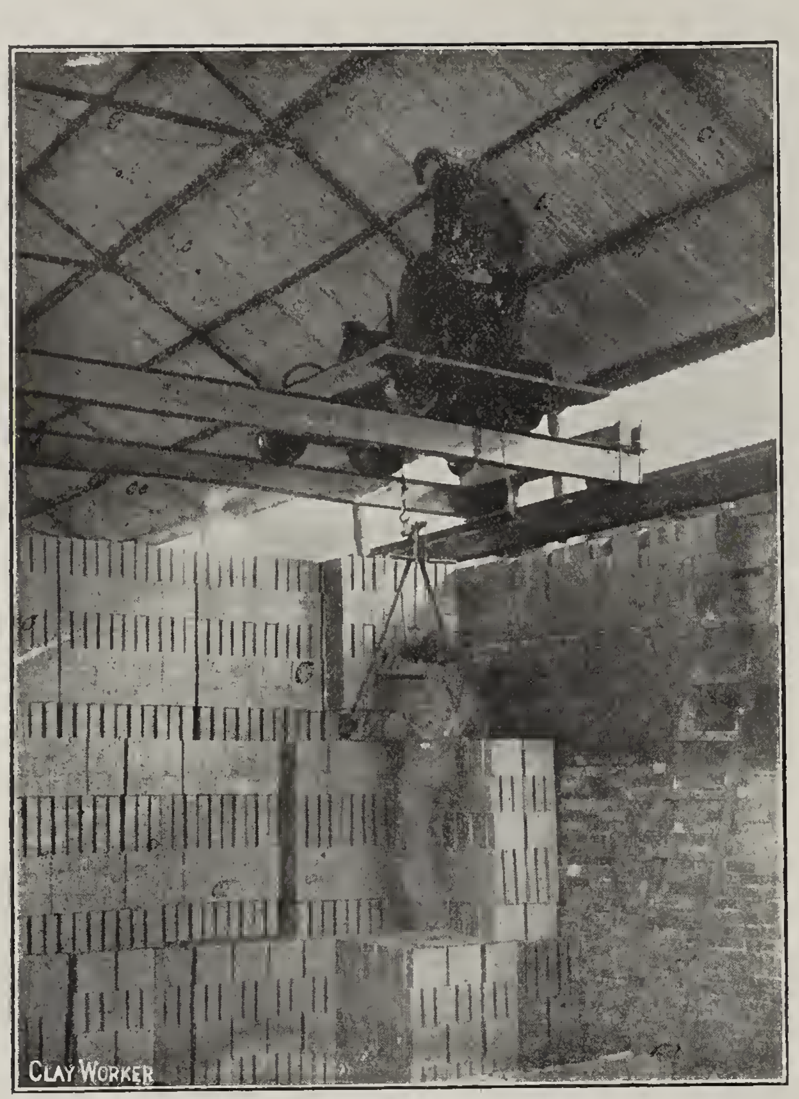


Fig. 7. Setting a Unit of Brick in Kiln

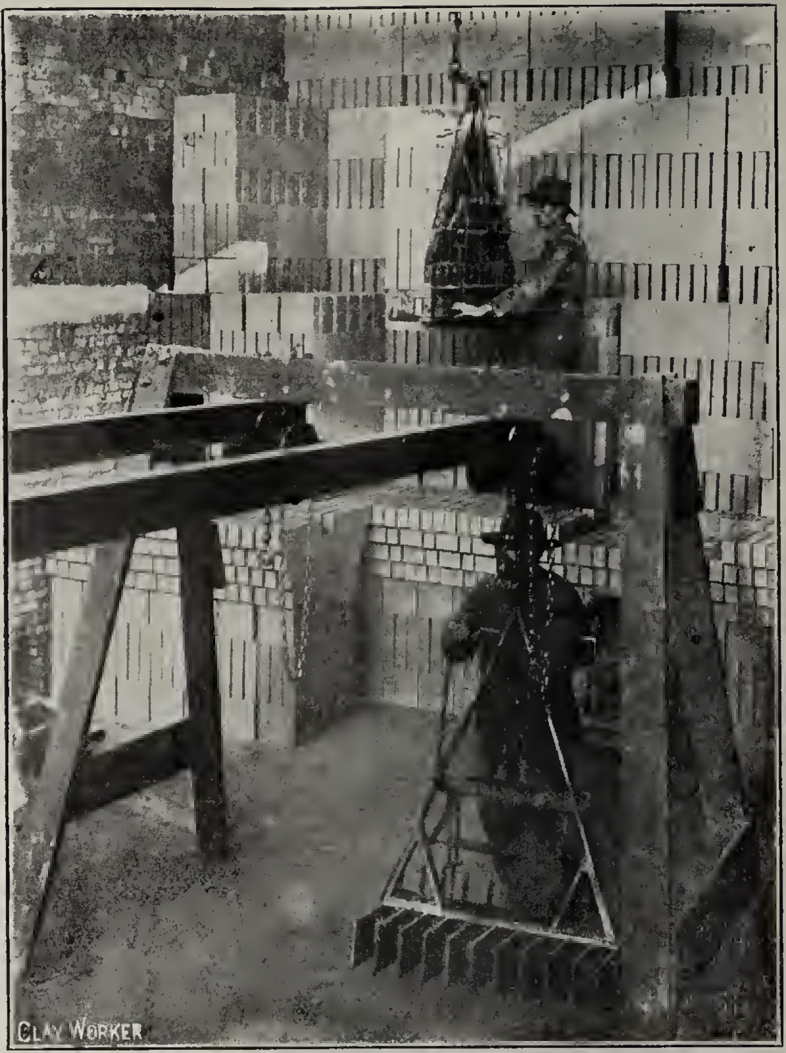


Fig. 8. Setting Machine Just Releases a Unit of Brick

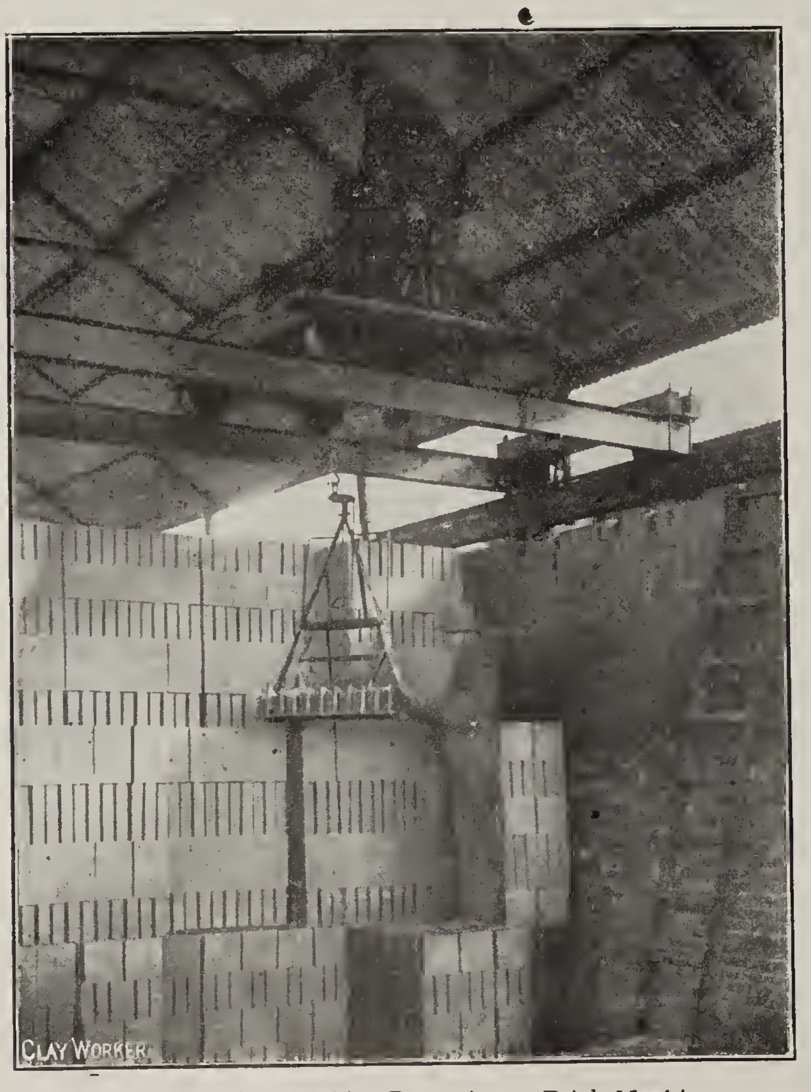


Fig. 9. Setting Machine Returning to Brick Machine

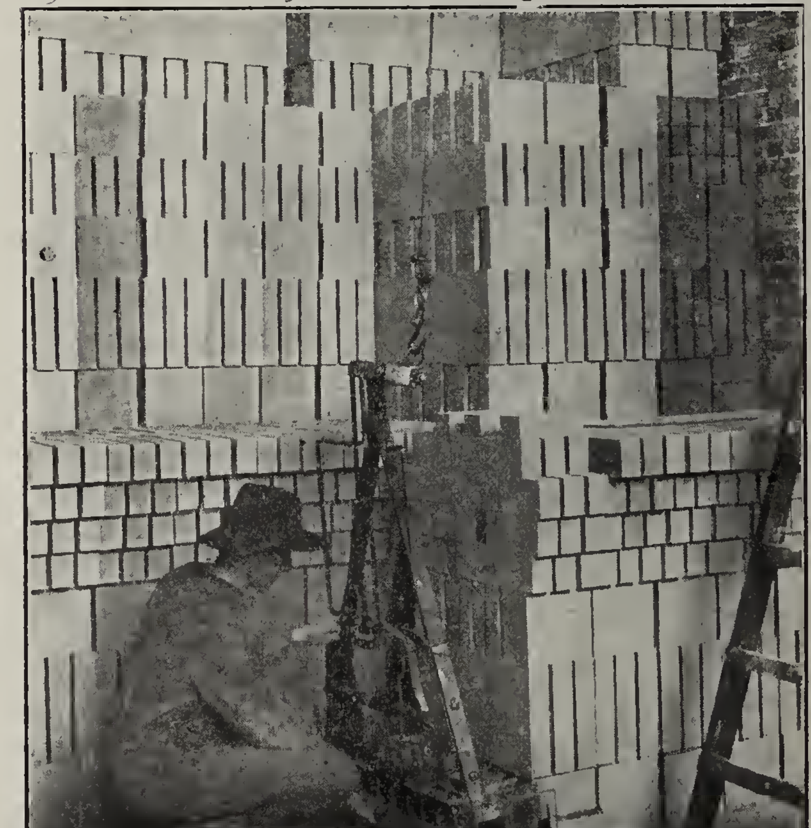


Fig. 10. Setting Machine Setting Arch Brick

CONSIDERS BRICK MORE FIREPROOF THAN CONCRETE

The brick men of the Pacific Coast have a new champion in Mr. T. J. A. Tiedemann, an insurance expert who recently addressed the Pacific Coast Underwriters on the question of "Building Construction and Rates." In the course of his remarks he cited a number of cases where brick had proved to be superior to all other building materials. Extracts of Mr. Tiedemann's paper are given herewith, says *The Architect and Engineer:*

"As a result of the conflagration in 1906, many defects in material were exposed, particularly in respect to the various kinds of stonework. Granite, limestone, and in some cases sandstone proved wholly unsatisfactory, being so badly damaged by the heat as to require replacement, partial or complete, in nearly every instance. Marble fronts and stairways also developed serious defects, and in the case of steps, it was demonstrated beyond question the absolute necessity of metal supports underneath. Defective flooring in steel frame buildings was another of the structural defects most noticeable after the fire. Hollow tile flooring, when not reinforced, was practically worthless, permitting, as it did, safes to crash from upper stories to the basement. One of the best examples of this defect which came under my notice was in the Mutual Life building, on the corner of California and Sansome streets. In this building a safe crashed down many stories, leaving apertures almost as large as an elevator opening for the flames to shoot through. Pressed brick and common brick walls in which cement mortar was used, i. e., honest brick work, proved conclusively that as a fire-resisting material it is superior to the various kinds of stone, and the only reliable barrier to check the spread of flames. Of reinforced concrete buildings, we did not have any in the fire zone. Therefore, an opinion based upon experience in this conflagration cannot be formed as to the fire-resisting qualities of this class of structure. We must also have demonstrated the adaptability and suitability of the various kinds of crushed rock and other materials used in the mixing of the concrete, together with the sand used here, for the production of a first-class structure of stability and durability. In the case of foundations, it was clearly proven that in San Francisco, where the earthquake hazard has to be considered, the foundations should be most homogeneous in construction.

"It has been argued that concrete foundations on piling are superior to any other. I do not wholly concur in this, my ideas having recently been changed. I believe that well-burnt brick, laid in good cement mortar on piling or other good base, is as durable and serviceable as concrete. As an illustration of this, and to support my statements, I would draw your attention to the foundations recently removed from the site of the old Balfour, Guthrie building on California street and from the west wall of the destroyed building of the New Zealand Insurance Company. These foundations were put in over forty years ago, and were of good brick, laid in cement mortar, all resting on massive timbers placed horizontally. These timbers when taken out were found to be as sound as on the day they were put in. A careful examination of those walls showed that they had sustained no damage from the earthquake, and, despite the fact that the ground was wet all the time, were so solid as to defy attempts to break them with picks or sledges. Drills and sledge hammers were finally used, and the foundations pried out in small sections. The solidity of those walls spoke volumes for the honesty of the work in their construction. The objection to this class of foundation is, however, that it is more expensive than concrete, inasmuch as the excavations have to be considerably deeper and require a much wider base terraced to the width of the proposed walls. From inquiries made in this matter, I find that the relative cost is in the ratio of 5 to 3.

"Another foundation that has just been exposed to view, the debris of the ruined building having been removed from it within the past month, is on the site of the Fair building on Montgomery street next to the Mills building. These and other examples of foundations put in many years ago in San Francisco will suffice, I feel sure, to convince in a great measure even the most skeptical. From the foregoing illustration it is apparent that as an all-round building material, durability and fire-resisting qualities considered, and from an expense point of view, a well-made and properly burned brick, laid in good cement mortar, is the superior of all materials.

"Assuming that my claim of superiority of brick as a building material is correct, and taking into consideration the object lessons presented at the time of, and immediately after the conflagration in San Francisco, when the walls and remaining portions of destroyed buildings, and those gutted by fire, cooled off, exhibiting many serious defects in all building material, other than brick, the question presents itself, 'Should not differential rates be applicable when computing the special rates on new buildings, having exterior walls of brick, granite, sand or other stone?' Personally, I am convinced that this should be done. I believe I am not in error when I state that on this coast there is no scale of charges for different materials. A steel frame building of fireproof construction, with exterior or panel walls of granite, sand or other stone, takes the same rate as an equally well constructed building whose panel walls are brick, with sills, cornices, etc., of similar material, or improved terra cotta. I am opposed to this rule, and believe the time has arrived when we should revise our rating schedule for various mercantile buildings. Taking the results of the Baltimore and San Francisco conflagrations as guides, I should grade building materials as follows: First, brick, or brick with improved terra cotta facing. Second, reinforced concrete. Third, sandstone. Fourth, marble. Fifth, granite No. 1. Sixth, limestone. Seventh, granite No. 2. In support of my contention in this respect, I will take as examples for comparison the following buildings, as they appeared after the fire of April, 1906: Merchants' Exchange, Mutual Life, Union Trust, Mills, Crocker, Woolworth Bank and Flood building. In this I shall forego reference to steel frames, etc., and confine my criticisms to the exteriors. The brick walls of the Merchants' Exchange were but slightly damaged and otherwise discolored, but aside from some cracks in the east and rear walls, showed no serious structural defect as the direct result of the fire.

"The Mutual Life building, admitting its inferiority structurally, was, with its heavy columns, caps and bases of granite, badly wrecked. While the upper half of the building has been taken down, the damage to the granite caps and bases can still be seen and estimated by visiting the building and viewing that portion left standing and at present occupied. In my opinion, it affords the very best lesson of the great damage that can be done by fire to semi-coarse and coarse-grained granite, of any building that was destroyed in the April, 1906, conflagration."

SAND-LIME BRICK BUILDING—DESCRIPTION OF DIVISION METHOD OF MANUFACTURE

That Sand-Lime Brick, when properly made, is a fine building material is amply proved by an inspection of the splendid opera house built by Oscar Hammerstein and located on the corner of Broad and Poplar streets, Philadelphia, Pa.

The new edifice, which is one of the largest and most modern in the world devoted to operatic productions, was completed in the incredibly short time of five months and seventeen days in spite of innumerable obstacles and labor troubles. On April 1, 1908, workmen began tearing down the old Harrah mansion, which occupied the site, and work on the foundation began on June 1st, the erection of the building being under the direct supervision of Mr. Arthur Hammerstein, son of the impresario. The architect is Wm. H. McElfatrick, who designed the Manhattan Opera House in New York City.

New Hammerstein Opera House in Philadelphia

The new opera house has a seating capacity of 4,100. It is faced with white silicate brick, made from sand and lime by the patented process of the International Sand-Lime Brick & Machinery Company, commonly known as the "Division Method," and the trim is stucco and marble. The white brick was also used for interior finish on stairway and for back wall of stage. The style of architecture is of the Louis XVI. period. It has a frontage on Broad street of 240 feet and extends 160 feet on Poplar, where the main entrances are located. The greatest height of the building, excepting the stage, is 160 feet.

The color scheme of the interior furnishings is dark red relieved by green and gold. The auditorium is carpeted with red velour. Six glistening pillars of Pavanazza marble rise to the balcony as an ornamental feature of the grand foyer directly above. Two immense stairways, also of Pavanazza marble and white silicate brick, situated to the right and left of the entrance into the auditorium lead to the grand foyer. One of the main architectural features of the house is the arrangement of the grand tier boxes and the special promenade.

This beautiful building is of especial interest to manufacturers of Sand-Lime Brick as it marks an epoch in the business, showing conclusively, as it does, the great possibilities in this material when properly produced. It is claimed by manufacturers, and an inspection of their factories amply proves their statement, that these brick can be made at a cost which makes it possible to sell in competition with common clay brick if necessary to do so, therefore, the future of the industry seems very bright for those using the proper method of manufacture.

DESCRIPTION OF THE "DIVISION METHOD" OF MAKING SAND-LIME BRICKS.

Materials.—Lump lime as it comes from the kiln. The nearer it is to a pure calcium oxide and the fresher it is the better. A good brick cannot be made from a lime rich in magnesia.

The lump lime is put through a crusher and reduced to ¼" mesh and finer, so that it can be accurately measured. Two and one-half tons per day is enough for 20,000 brick, and can be crushed and stored in a bin in about two hours, leaving the man who operates the crusher free for other work after that time.

Sand.—From bank, river bed, or sea shore, or quarry waste, slag, tailings from mines, or almost any material of over 70% in silica may be used. The richer the silica the better the brick.

The sand is usually passed through a dryer, preferably of the direct heat rotary type, as all vegetable matter is then consumed, and any particles of limestone, feldspar, or other ingredients which expand under action of heat are fully expanded before being put into the brick, thus making walls much stronger if subjected to fire. If this has been done the walls will not crack if the building should burn.

The sand, after drying, is elevated to a tank or bin similar to the lime bin and holding about ten tons.

Both the lime and sand bins are usually located on the second floor of factory over the tube mill or pulverizing cylinder.

Process.—The materials feed by gravity by means of conveyor belts from these bins or tanks, to the intake or feed of the tube mill. As the sand falls from the end of its conveyor belt, it is divided into two portions, thence the name "Division Method," and one part, usually the smaller, passes with all of the lime into the tube mill and is there ground to an impalpable powder, 200 mesh fine. It is in the preparing of the material that this process differs from the others and to which the division method patents directly apply.

Others, who grind the sand at all, do so with it absolutely machine is simply a mechanical mixture of finely ground particles of sand and lime more or less fine, depending upon the kind of machines used and on the handling of the same.

In the division method this is not done, as they use the sand slightly moist and try to have the sand leave the dryer with a small percentage of moisture in it. If it comes out too dry a steam jet supplies moisture in required quantity. The moisture in the sand being ground naturally attacks the lime, starting hydration while the grinding is taking place. This means heat and the friction caused by the grinding makes more heat. It is a peculiar fact that this mixture remains purely mechanical in its nature until ground to near 180 mesh or nearly down to the molecules, and then the moisture or water, lime and sand, combine chemically, producing a hydro-calcium-silicate or pure cement. It is this cement which is mixed with a given quantity of unground sand that makes the brick. The quantity of hydro-calcium-silicate or sand-lime-cement added, is just enough to completely fill the voids or spaces between the grains of unground sand, making a perfect bond and leaving no space for water to penetrate.

When the brick are pressed a thin layer of this fine material is forced to the surface, which makes the brick almost waterproof, the absorption being very low and also very slow. The finely ground material from the tube mill is mixed with the underground portion of the sand (which is carried over the tube mill) in a pug mill or blade mixer, the mass is elevated to a silo or storage bin, in which it remains over night.

The division method silo is patented and is automatic in its feed and discharge. From the silo the material goes to the press, being passed through an agitator or mixer on the way, to break any lumps that may have formed. The material as thus prepared does not cut the liners in the molds, as material prepared by other processes do. Last year the factory at Glens Falls, N. Y., made 900,000 brick on one set of liners. This point alone means an additional profit on the brick of quite an item.

From the press the brick are stacked on flat cars and run into hardening cylinder or retort, in which they are subjected to 125 to 150 pounds steam pressure. In the morning when the cylinder is opened and the brick are removed, they are ready for the wall as soon as they are cool enough to handle.

Rip he works of The C. W. Raymond Co.
on, Ohio. April 5, 1909.

Prof R. C. Purdy and Junior Ceramic Class of Ohio State University

CERAMICS CLASS VISIT RAYMOND'S

The annual pilgrimage of the Junior Ceramics class of dry and, as a result, the material coming from the grinding the Ohio State University, Prof. R. C. Purdy in charge, started from Columbus on the morning of April 5th and arrived at the works of The C. W. Raymond Company, Dayton, Ohio, at noon of that day, where they were escorted through the plant of that company and were explained the various details of the wonderful machines they turn out. Considerable interest was manifested and careful note taken of the many small details which go so far toward making a perfect machine.

One of the principal items shown the class was the new Raymond member, the magnificent "888" Brick Machine. The No. 2 Rotary Automatic Cutter, the immense "999" Special Brick Machine, Dry Pans, Screens, Victor Represses, etc., were all explained in their entirety.

After several hours visit a tired but enthusiastic class went to the works of the Oakwood Pottery, where fresh interest was awakened by witnessing the manufacture of red ware.

In the evening they took the train for Cincinnati.

* * *

The King Engineering Co., of Richmond, Va., added four tunnels to the dryer in the brick works of W. B. Davis, of Richmond. His ten tunnels are now drying 51,840 soft mud brick each and every working day.

MARKED PROGRESS IN PAVING BRICK AND BRICK ROADWAYS

It is gratifying to note the marked progress being made by the paving brick manufacturers in every section of the country. The experimental stage has passed in this form of street construction, and while there are evidences in existence at this time in some localities of the poorer qualities of brick, these must, in the end, give way to those that are in every respect worthy of the name. In some localities there has been aversion to the general use of vitrified street paving, and while this has been due to a number of causes that were actuated by the competitive paving manufacturers who endeavored in this way to place their material on the market, there were instances where the brick themselves were of a very inferior quality.

The results of one failure in any form of street or building material will do more damage to the future popularity of the material itself, than ten times that number of substantial streets and structures. It took years for a number of paving brick manufacturers to realize this in a proper light; they believed or endeavored to make themselves believe, that a few failures here and there did not mean any great loss when it came to future orders.

The lessons learned in those days were costly in some instances, but the good derived from them has been most beneficial to the industry as a whole. Of course there were instances where a street did not give entire satisfaction, not because the brick, themselves, were at fault, so much as that the contractor did not understand his business properly or endeavored to cheapen his work so that he might in this way increase his profits.

In laying a brick street there are several conditions that must be borne in mind; the primary condition which is that the brick must be of the best possible quality. It is useless to suppose that a good street can be had where the brick have not withstood the very best possible test, which should be the manufacturer's most important requisite in placing his product on the market. Considerable attention is now being given to this feature of the business by the brick manufacturers and it will have a very lasting as well as a very important effect on the future of the paving brick industry, and for this reason, no manufacturer should for one moment become lax in his duty in this respect.

Owing to the competition that has arisen within the past few years, among manufacturers of different kinds of street paving materials, there is need for the most painstaking endeavors by the vitrified brick manufacturers, so that there will be no possible reason for their product being rejected by municipal authorities. There are several reasons in favor of the street paving brick, for not only uses on our city highways, but in the construction of county roads as well, and while some localities now appreciate this fact and are each year using more of this material for the above purposes, there is room for a much greater output, and the brick manufacturer should do his part in bringing this about as early as possible.

The recent agitation looking toward the improvement of the county roads in many sections of the country, opens up a new channel or rather extends the same, so that there should be within the next few years, a very much larger demand for vitrified brick in the improvement of these roads. The work done along this line in the past has proven most gratifying, and the matter should be fostered by all those who are interested in enlarging the scope of the vitrified paving industry.

Gravel, crushed stone and bitumen, have not fulfilled the exact requirements in the construction of county roads, for while they have improved the conditions of the same, have not justified the original cost, and the added expenditure of the repairs, which must be made frequently, where a desirable roadway is possible. Within the next few years there will no doubt be many miles of county roads improved, because this is one of the questions that has forced itself upon the public, in such a way that it must continue to command the attention of everyone, as the making of substantial county roads will add very materially to the growth and development of the country.

Vitrified paving brick are admirably adapted for this purpose, and where the material has quality and the work is done along scientific lines results are bound to be such as to give the most eminent satisfaction.

With the availability of first class paving brick, the honest contractor will be enabled to do most satisfactory work. It will be necessary then, only to have a substantial foundation which can be obtained more readily with a substructure of crushed stone and cement. When this is properly laid and the surface is spread with a sufficient amount of sand, the brick can be laid in a manner that will not only insure a smooth surface, but one that will give many years wear. There is one thing, however, that should be added to this, and that is the necessity of a good filler.

Aside from the use of vitrified paving brick for street paving purposes, this material is coming into more general use in the construction of large sewers, and the erection of walls where the same is destined to withstand the ravages of time. In the former use, these brick, on account of their hard and glazed surface, have been found to make a most admirable material, and are considered superior to most any other. Their durability makes them impervious to disintegration, which is very often possible in sewerage, owing to the acids and alkalies which naturally become a part of the matter that continually passes through the sewers.

The use of vitrified brick for this purpose is increasing, and there can be no doubt but what there will be a demand in the future for larger quantities. For large walls the use is increasing also, and in this way the paving brick manufacturer will be enabled to find a greater demand for this output, provided he gives the product the most painstaking care in manufacturing the same.

MR. WILSON ADVANCED WITH HYDRAULIC COMPANY

Oscar Wilson, assistant secretary and treasurer of the Menomonie, (Wis.) Hydraulic Press Brick Co., for the last eleven years, has resigned and will represent the company in the sales department, beginning May 1. Mr. Wilson will be succeeded in the office by P. O. H. Lentz, of St. Louis.

BUILDING OPERATIONS IN 1908

The total cost of the buildings erected in the principal cities of the United States in 1908 was $546,467,390, according to Jefferson Middleton, of the United States Geological Survey, who has collected statistics on this subject in connection with his investigations of the clay-working industries. In 1907 the cost of buildings in these same cities reached a total of $626,148,890. The decrease in cost in 1908 therefore amounts to $79,681,500, or 12.73 per cent.

RANK OF CITIES

The relative rank of the cities in cost of building operations is interesting. New York is first, the cost of its buildings exceeding the cost of those of its closest competitor, Chicago, by $50,584,582, or more than 75 per cent. If the cost of operations in Brooklyn, the third city in rank, is added to that for New York, the total will be $163,684,622, or 30 per cent of the cost of the building operations of the 49 cities included in the table. San Francisco is fourth in rank, Philadelphia is fifth, and St. Louis is sixth. Seventh in rank is the small though rapidly growing city of Seattle, which spent more for buildings in 1908 than Pittsburg, which was eighth, Boston, which was ninth, and other cities much larger. This great activity in Seattle is ascribed to the extremely low prices of building materials and labor.

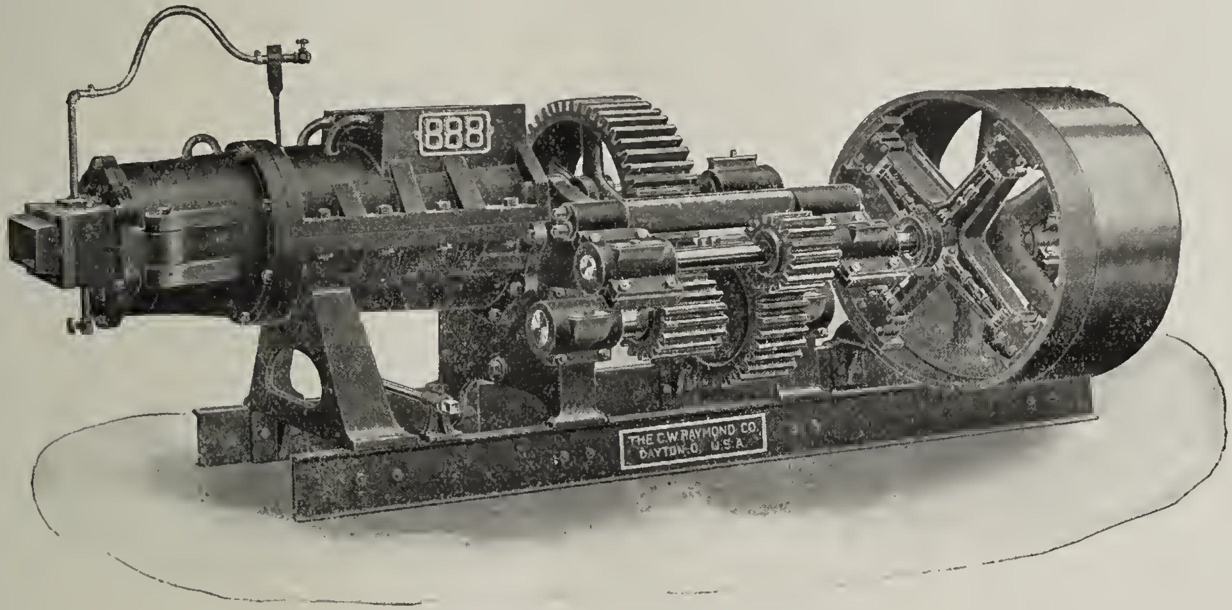
CHARACTER BUILDING

Of the permits issued or buildings erected 38.64 per cent were for buildings of fire-resisting materials, and 61.36 per cent for wooden buildings, corresponding closely to the percentages in 1907. The average cost of brick or fire-resisting buildings in 1908 was $9,089 and of wooden buildings $2,101.

Chicago reported the largest number of brick buildings —8,208, with an average value of $6,818; Philadelphia the next largest number—6,778, with an average value of $3,308. Brooklyn reported the third largest number of brick buildings and New York the seventh, though in cost of buildings of this class it is first. New York reported 1,884 brick buildings costing $103,064,486, or nearly twice as much as Chicago's 8,208. The average cost of fire-resisting buildings in New York was $54,705. No wooden buildings were erected in the borough of Manhattan, those reported for New York being in the Bronx. The largest number of permits for wooden buildings was issued in Seattle—7,777, the average cost of the buildings being about $1,000. The next largest number of wooden buildings was reported by Los Angeles—4,679, costing on an average $1,383. The greatest cost for wooden buildings was reported by San Francisco, the average cost being $3,641. Chicago, which reported the largest number of brick buildings, was eighth in number of wooden buildings. Except for Reading, where none were erected, Philadelphia reported the smallest number of wooden buildings—45, with an average cost of $1,482.

REPORT IN PREPARATION

A report on the clay-working industries of the country, including statistics of the building operations, is now being prepared by Mr. Middleton and will be issued by the Survey within a few months.



The C. W. Raymond Co. 888 Brick Machine

THE NEW RAYMOND 888 MACHINE

The C. W. Raymond Company, of Dayton, Ohio, have recently placed a new machine before the brick making public, which was fully demonstrated by practical use before being exploited on the market. The machine was christened the "888" placing it in the line of "Magic Figures" made famous by the Raymond Company.

The design is on the most improved mechanical lines as well as those of grace, expressing many new ideas in brick machine construction. It is particularly arranged to overcome excessive lamination, as well as embody great strength and durability.

Among the novel features is the interior construction in the nozzle and auger by which an even flow of the clay column is secured and an equal distribution of the friction in the die.

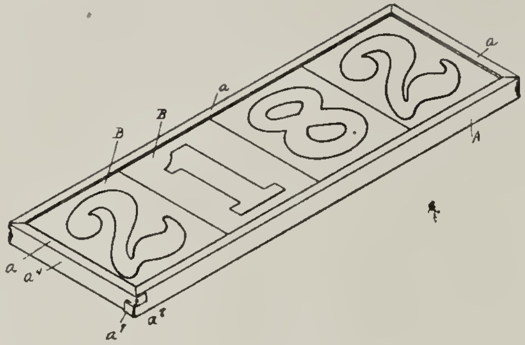
Another point is the new design of thrust bearing, wherein the thrust pressure is divided so that it is not concentrated on one point, which assures a cool, easy running bearing as frictionless as can be made.

Our illustration gives a good conception of the appearance of the machine, however, the Raymond Company have issued one of their exhibits explaining everything in detail, and with a fine large illustration. A copy of this exhibit may be obtained by dropping a postal to them at Dayton, Ohio.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

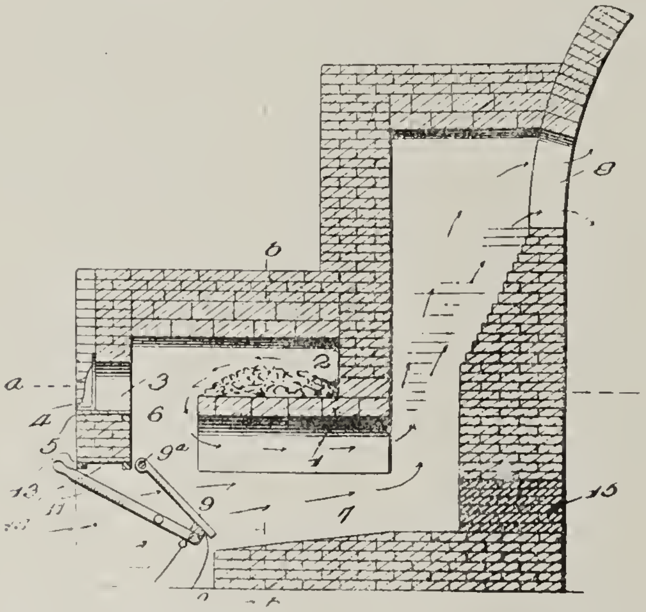
910,586. Tile Sign. Frederick M. Ross and Otto Wolff, Newport, Ky., assignors to Alhambra Tile Company, Newport, Ky., a Corporation of Kentucky. Filed Mar. 28, 1908. Serial No. 423,806.



In a tile sign the combination of a frame formed from a strip of metal having inwardly projecting flanges along each of its edges, one of the meeting ends of the strips having a tongue upon one side and the other meeting end having a tongue upon the opposite side and each of said tongues being bent down upon the opposite meeting end of the strip and tiles held in the frame between the inturned flanges.

912,828. Furnace. Simon Dewhirst, Oskaloosa, Iowa. Filed Apr. 7, 1908. Serial No. 425,716.

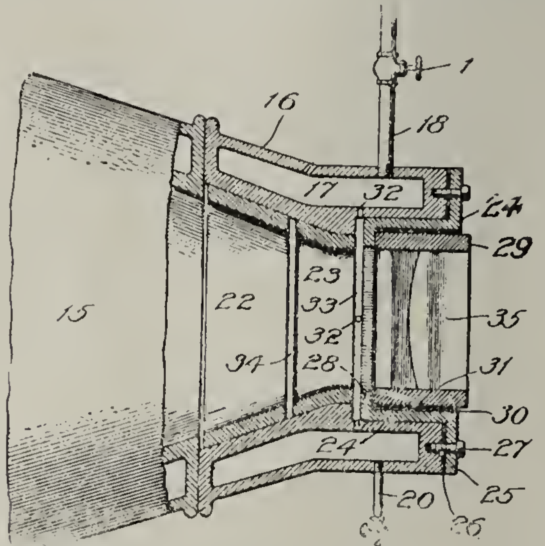
A furnace of the character described, comprising side and end walls and a top portion, and provided with a passage way communicating with openings formed in the end walls, a coke table positioned in the passage way, and in line with one of the end wall openings, grate bars pivotally secured to the side walls and arranged to be moved toward the coke table, and a lever pivotally secured to the side walls and having connections with the grate bars for moving the same.



A furnace of the character described, embodying a coke chamber, a coke table therein, the furnace being provided with a combustion chamber underneath the coke chamber and in communication with the forward end thereof, the combustion passage having a forwardly sloping bottom wall, a series of grate bars pivoted at one end to turn about a horizontal axis in the forward end of the combustion chamber and sloping downwardly and rearwardly toward the inclined bottom wall of the combustion chamber, and means for raising said grate bars.

914,735. Clay-Working Machine. Frank B. Lambert, Chicago, Ill. Filed March 23, 1908. Serial No. 422,695.

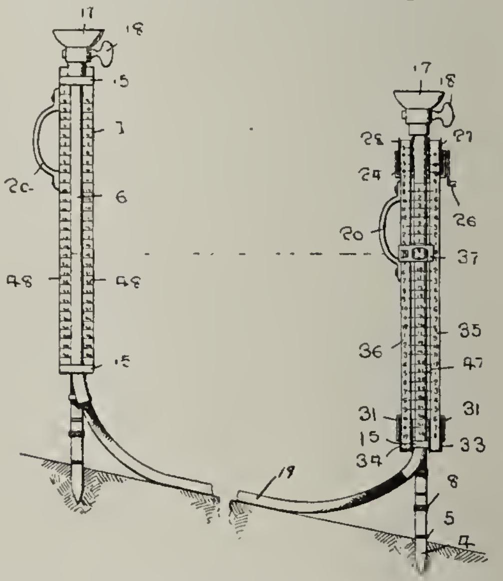
A die for a brick-making machine consisting of a substantially rectangular frame having a cutting blade across the middle thereof, the walls of the frame parallel to said blade being recessed opposite the cutting edge of the blade.



A die for a brick-making machine consisting of a substantially rectangular frame having a cutting blade across the middle thereof, the thickness of the blade first increasing and then decreasing away from the blade, and the walls of the frame that are parallel with the blade being recessed to correspond with the increasing thickness of the blade and then brought inwardly to correspond with the decreasing thickness of the blade.

914,945. Drainage-Level. Philip Gutwein, Jr., Francesville, Ind. Filed Aug. 25, 1908. Serial No. 450,149.

A device of the character described, comprising blocks, tubes carried by said blocks, containing fluid, a flexible tube connecting the aforesaid tubes, endless movable tapes, means applied to one of said blocks for actuating said tapes.



A device of the character described, comprising blocks, tubes carried by said blocks containing fluid, a flexible tube connecting the aforesaid tubes, movable endless tapes, rotatable means applied to said blocks encompassed by said tapes, one of said rotatable means being adapted to be manually actuated, and one of said blocks having an indicating device for registering with indicia theron.

PACIFIC COAST NEWS ITEMS

Now that clear weather is ruling once more and there is but little likelihood of there being any further delays in building operations on account of rains, builders are commencing work on the large number of contracts that have been taken during the winter season, and there is now more activity in this line than has been experienced for some time. However, operations are not yet quite as heavy as had been hoped from the amounts of the permits that have been let, but it is thought that it will be but a short time until work will be commenced on all of these. Brick dealers report that in addition to the large contracts they now have on hand that they are doing more figuring on work to be done this summer than they have for a long time past, and there is a general feeling that this season will prove to be a very prosperous one for the trade in general, and that the overstock that is even now on hand will soon be taken care of. Almost all of the plants have resumed operations, though it is to be noticed that many of them are not working yet to their full capacity, as it is not desired to stock up very heavily in advance.

The price of common brick is being maintained at $9, and there seems to be but little chance of it getting back to a lower figure, as there is a definite understanding in regard to this now in force among the large manufacturers and the small manufacturers are only too glad, with the experience of last year still fresh in their memory, to follow suite. The new standard size brick is now coming into the market in good sized quantities, and it will be but a short time, it is thought, until all the plants will be equipped for turning out this size brick. It will be a year or more though before all the old odd sized ones are disposed of.

A very encouraging feature of building operations at the present time is the decision of the municipal government to get busy on its various projects and erect the buildings needed for its uses. Among the first of the new structures will be the Hall of Justice on Kearny street, N. Y., and already contracts have been let for laying the foundations of this building. A bond issue of $4,000,000 for the erection of the new City Hall is now being discussed, and while it will be many months before active work on this structure can be commenced, it is worthy of note that the matter is receiving attention. The work of tearing down the old structure is progressing very rapidly and within a short time all traces of this lamentable wreck will have been removed.

During the present month the Carquinez Brick & Tile Co. will finish making deliveries of brick to the Palace Hotel Company, and will have delivered over 3,000,000 common brick for the immense Market street hotel. The pressed brick that was used on this structure would bring the total to large proportions. This brick company has been taking advantage of the rainy season to make some substantial improvements in its dryer at the Port Costa plant, and this now has a much larger capacity than formerly.

The big plant of N. Clark & Son in East Oakland is now in full operation again, and this firm has a large number of good sized orders now on hand, insuring a continuation of operations on a large scale for some time. A contract has been secured from the city of Santa Cruz for the delivery of over seventeen miles of sewer pipe of various sizes, and shipments are now going forward. Some large contracts are also being filled now for material for buildings in San Francisco.

The Great Western Brick Company has had its big plant closed for almost a year on account of the low prices received for its product, but now that there is an improvement in both price and in the market it has been decided to commence operations again and the plant will be in working order about the tenth of April.

The city of San Francisco is preparing to ask for bids for furnishing the material for a sewer system in the Ocean View district, the estimated cost of which is to be $500,000. The manufacturers of vitrified brick are getting ready to submit bids, and the cost of the material of this character used will make the bidding quite a spirited affair.

The various brick and terra cotta manufacturers doing business in San Francisco are now getting out a very attractive catalogue of building materials, and this will be distributed among contractors and builders. An effort that will be greatly appreciated is the one along the line of standard classification of terms used, and still further improvements in this respect are promised for the near future.

The Gladding & McBean Company has just let the contract for the construction of a two-story building in the Mission district, near the Ferry, and will use this when completed for a warehouse. The main offices of this firm are now located in the Crocker building and the yards are temporarily located on Eddy street.

Chaloupka & Schmit have just finished the erection of a plant at The Dalles, Ore., and will shortly commence operations.

The Spokane Brick & Sand Co., of Spokane, Wash., has been incorporated with a capital stock of $100,000, and plans are being made for the immediate erection of a plant of large size.

Linn & Stewart have commenced the manufacture of cement blocks at South Bend, Wash.

The Portland Enamel Brick & Concrete Co. has been incorporated at Portland, Ore.

The Hydraulic Stone & Brick Co. will shortly commence business at Klamath Falls, Ore.

Easum Bros., who conduct a brick plant at Colfax, Wash., have decided to branch out in the business and will shortly establish a branch yard at Rosalia.

The Columbia River Clay Company has sold its machine shop at Kennewick, Wash., and will have its repair work done on the outside.

The Astoria Clay Products Company has finished the first kiln of the new plant at Alderbrook, Ore., and is now making preparations to install a pressed brick machine, the present equipment being for making stiff mud bricks only.

The Corona Pressed Brick Company, of Corona, Cal., is doubling its capacity in the sewer pipe, the pressed brick and the fire brick departments.

◆

The Standard Shale Brick Co., Youngsville, Pa., are making paving and building brick at the rate of 50,000 daily; the kilns were constructed by the Wilson Kiln & Dryer Co., of Philadelphia, Pa.

CLAY RECORD.

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Vol. XXXIV. APRIL 30, 1909. No. 8

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

No matter how well you treat the world, you will never get out of it alive.

The butter of courtesy should be thickly spread upon the bread of independence.

It is a good thing to have opinions, but its a better thing to keep the lid on them sometimes.

A man's last silver dollar looks as big as a cart wheel just before it disappears around the bend on the pike.

Enthusiasm is a lubricant that makes the wheels of trade go round; a grouch is sand in the bearings; Enthusiasm, like melancholia, is catching.

Architect Fitzpatrick says, "No nation on earth builds as much as we do, but neither does any other nation have to build so much. Our much vaunted rapid growth and phenomenal building booms give a false impression of the real conditions. Nearly 50 per cent of our new buildings go simply toward filling up gaps made by fire. In the past twenty-five years we have burned up $3,500,000,000 worth of property; we have wiped 1,000,000 buildings out of existence in less than ten years. In Boston $1,500,000 is a small yearly loss. It is a disease. Millions are spent yearly in handling the disease after it breaks out, but only hundreds of dollars in steps to prevent its outbreaks."

"The same spirit that inspires manufacturers to use deleterious drugs in foods, prompts builders and owners to apply the term "Fireproof" to that which is not. All sorts of delusions and snares in the way of buildings masquerade under that guise.

We have seen the flimsiest kind of frame structure, painted over with some patent concoction or other, and used as a hotel and boldly advertised as a fireproof building.

The misuse of the term fireproof is a greater crime against humanity than highway robbery or forgery, or many other heavily punished offenses against life or property."

HUDSON RIVER BUSINESS BEGINS EARLY

A good demand for brick is taking Hudson river cargoes as fast as they arrive in the market, and the manufacturers are shipping freely. Prices, consequently, average a shade higher than last week, in that the cheaper grades have an upward tendency and fewer grades are obtainable this week at the minimum quotation for good brick. A good hard quality of Hudson river brick readily commands $7.50 to $7.75 per thousand, and the best Jerseys $7.25 to $7.50.

For this season of the year the demand is large, but there is still a good supply at the works, though less than last year. Stocks are larger on the upper Hudson than on Haverstraw bay, where the supply has run low—"almost exhausted" as one report says.

Manufacturing will begin earlier this spring, especially at Haverstraw, where the opinion prevails among manufacturers that those who do not make an early start "will only be letting the new firms that are to being operations for the first time this year secure the cream of the business." It is estimated that the increased output this year will be fully one hundred million. Three new firms will start at Crugers, and a number of works along the stream that were idle last year will be operated, including the Dunnigan yard at Stony Point and the O'Brien & Vaughey plant at Chelsea. The new firms at Crugers are O'Brien Brothers & Lynch, East Shore Brick Company and Matthew Gormley.

MESSINA TO BE PROPERLY REBUILT

Prof. C. W. Wright, of the Geological Survey, has just returned from Italy's stricken district, and in a lecture at the Cosmos Club said that undoubtedly a type of structure that will have great resistance to shocks will be adopted for the rebuilding of Messina, and it will be for the government to see that this type alone is used.

Engineers and architects were much interested in the description of the Hollow Tile Building that of all the different kinds of construction in Messina best stood the tests of quake and fire. This Hollow Tile Construction, reinforced with steel members, will in all likelihood be adopted as the standard mode of construction and insisted upon by the authorities.

In this country the National Fire Proofing Company manufactures and erects nearly all of the buildings of that character, and it has fire-proofed over sixty per cent of our best buildings and its construction is the accepted standard in the best practice. Engineers here expect that that company will be requested by the Italians to help in the reconstruction of Messina and the company may even build a plant there.

OBITUARY

Harry Crytzer, superintendent of the Kountz Bros. Co., Brick Works at Harmanville, Pa., died at his home in that place.

John T. Moore, of the Sanitary Earthenware Specialty Co., Trenton, N. J., died at his home of pneumonia. He was 52 years of age.

Major John S. Clemmer, former postmaster and mayor of Salem, O., died there at the age of 83 years. He at one time was the superintendent of the Garfield (O.) Brick Works.

James Martin, died at his home, 1504 So. Capitol Ave., Washington, D. C., aged 76 years. He and his brother, who died in 1907, owned the brick works at the foot of Capitol Street.

M. M. Grant, secretary and general manager of the Columbus, (O.) Clay Products Co., is dead; he will be succeeded by his brother, A. H. Grant, of Grove City, who had been the general superintendent of the plant.

Job Froggett, for 61 years a resident of Youngstown, O., died at his home after a long illness. He was 80 years old. With James V. Rose, of Sharon, he built a brick plant at Quakertown, Pa., and later became associated with J. L. Smith.

FIRE! FIRE!! FIRE!!!

The Florey Brick Works at Downington, Pa., were destroyed by fire with the exception of the machine and engine rooms.

The Clinton, (La.) Brick Works was completely destroyed by fire causing an $8,000 loss, no insurance on any of the property.

The entire plant of the Amos Kent Lumber & Brick Co., at Kentland, La., was destroyed by fire causing a $200,000 loss. Insurance, $110,000.

At New Brighton, Pa., the plant of the Sherwood Bros. Pottery Co., was destroyed by fire to the extent of $12,000, which was covered by insurance.

Damages to the extent of several thousand dollars was sustained by the Fred Sietter Brick Works on Nicetown Lane below Front St., Philadelphia, Pa.

The Robert I. Patterson Brick Works at Uniontown, Pa., was destroyed by fire causing a loss of $12,000, no insurance. It is thought to be incendiary.

Eleven houses belonging to the Hammond Fire Brick Co., at Hammond, W. Va., twelve miles west of Fairmont, were destroyed by fire of unknown origin. The loss is $20,000, partly insured.

The Chalmers (Ind.) Tile Works, owned by Mrs. John T. Cuppy, of West Lafayette, and operated by John Townsley, was partly destroyed by fire. It will be rebuilt as soon as the loss can be adjusted.

Fire destroyed the brick plant of the Sampson Brick Co., at South River, N. J. The plant had not been operated for three years, but had reliable machinery which was destroyed. It was what was known as the James Bissette property.

HITCH IN PORTLAND CEMENT DEAL

Promoters of the $200,000,000 Portland cement combination are not meeting with as much success as they expected. It is learned that the negotiations which were in progress to get the western manufacturers to join the combine have been dropped. According to an official of one of the companies, known as the "Big Six," however, negotiations are likely to be taken up again at any time. In this connection April 30 will determine whether the proposed hard and fast agreement among the eastern cement manufacturers will continue, one provision of the agreement being that any party to the plan may withdraw on that date.

ACCIDENTS, DAMAGES AND LOSSES

J. T. Fowler of Arcadia, Kansas, has been appointed receiver for the Diamond Brick & Tile Co., of that place.

John A. Francis has started suit for $12,500 damages for breaking his leg in the plant of the Sheffield (Ia.) Brick & Tile Co.

The plant of the Garfield, (O.) Brick Works was sold by the sheriff at the court house steps in Youngstown, Ohio, April 29th.

One fireman killed, two fatally injured, by the falling walls of the burning Sherwood Bros. Pottery Co., near New Brighton, Pa.

The district court has ordered that all the personal property of the Superior Brick, Tile & Milling Co., of Ogden, Utah, be sold at private sale.

W. F. Soisson, trustee of the Reese-Hammond Fire Brick Co., is suing the First National Bank of Pittsburg, Pa., for the book accounts of the brick company.

The abandoned plant of the Ft. Wayne, Indiana, Pressed Brick Co., was practically demolished by recent winds. The roof was blown off and only a portion of the walls and the smoke stack remains.

Several people were seriously wounded and shot while trying to apprehend Webb Sturkey, a negro, who tried to hold up Willis Payne, superintendent of the Riverside Brick Co., of Birmingham, Ala.

Rowes McNerny, foreman of the Kankakee, (Ill.) Brick & Tile Co., was horribly crushed in a pair of cogs while oiling the machinery in the mill room. One leg was drawn in and tore the shredded limb from the body.

BONDHOLDERS PAY FOR THE OAKS BRICK PLANT

Lambert A. Rehr, representing 115 bondholders of the United States Brick Company, paid over to Trustee Trexler, $50,600, for the Oaks plant of the Montello Brick Works, at Perkiomen, Pa. This property was bought at public sale, on Thursday, April 8, and in spite of the objection of a Norristown bidder, who offered to $60,000 at a re-sale, if given 18 months to remove it, the sale was confirmed by Referee Bertolet.

Howard L. Boas, chairman of the committee acting for the bondholders, stated that it was too early as yet to say definitely what will be done with the plant. It is inferred that the bondholders have or can easily procure from the Montello Brick Works, an agreement concerning the removal of the factory, or they will rent or buy the land from the Montello people.

Mr. Boas said that an effort will be made to lease the property to some company, who will operate the plant, as it is believed, that it can be made to pay.

Later there will be a meeting of the bondholders, in the Board of Trade rooms, when Mr. Rehr will, by deed of trust, sign over the property to the 115 bondholders, who will be part owners, in proportion to the amounts subscribed by them. The bondholders will be asked to name as the five Directors: Mr. Boas, Chairman of the Bondholders' Committee; A. J. Brumbach, treasurer, and Mr. Rehr, together with Jacob B. Fricker and J. G. Mohn. These five men furnished over half the funds needed for the purchase of the plant, the other 110 bondholders subscribing $25,000.

OMAHA COUNCIL STIFLES INDUSTRY

The brick making industry in Omaha, Neb., will be limited and no more brick yards will be allowed within the city limits providing the council concurs in the report of the committee of the whole and passes an ordinance prohibiting extending this industry. The committee recommended the ordinance for passage, Councilman Bridges voicing the only objection.

J. Herman Krittenbrink, a South Omaha manufacturer of brick, applied for a permit to establish a yard at Thirty-sixth and Wright streets, Omaha, but he was met with the objections of about 200 property owners, who sent a petition to the council protesting against the proposed yard, which, they declared, would be a nuisance. This protest was received, but instead of refusing a permit to establish a brick yard at Thirty-sixth and Wright streets or the immediate vicinity, the council decided to prohibit them anywhere in the city. There is no ex-post facto provision in the ordinance, and those kilns now established will be allowed to operate.

Councilman Bridges exerted himself tremendously in behalf of the brick manufacturer and made a strenuous speech in the council chamber, but all for naught.

"Here we are trying to build up a greater Omaha, but whenever anyone comes along and attempts to spend his money in establishing a new enterprise which would give employment to scores and scores of men, we shut the door of the city in his face and tell him to clear out," said the councilman. "How in the name of Caesar are we going to build up a city with tactics of this sort? Brick is shipped to Omaha every day from Kansas and Missouri. If we had more kilns in this city so that the supply could meet the demand, we would not need to send our money out of the city and it would stay in Omaha and go into the pockets of Omaha workmen."

Citizens, some of whom lived a mile from the proposed brick yard, objected on account of the smoke which would issue from the plant, but Mr. Bridges declared the smoke would not be half so dangerous as the gas tank which the council refused to move. "And gas tanks blow up every little while and kill scores of people, but no one ever heard of a brick kiln blowing up," said the councilman.

TENNESSEE BRICK MAKING PLANTS RUSHING

The brick making plants of Nashville, Tenn., have put on full forces the past two weeks and are now operating on full capacity, evidencing their faith in the building outlook. While actual orders are not yet sufficient to take up all the output of the local plants, inquiries are coming thick and fast, indicating that there will be plenty doing in all Tennessee in a building way this summer.

Orders for Brick from the county towns of the State are heavier just now than they have been for three years, which means, of course, that more building is under way or in prospect in the smaller towns than for a long time. The Bush Brick Co., now has many orders on its books unfilled and other plants are facing about the same situation. The brick manufacturers regard the outlook as entirely satisfactory.

CEMENT PRODUCTION IN 1908

The total production of all kinds of cement in the United States during 1908, as shown by returns received by the United States Geological Survey from all the cement producers of the country, amounted to 52,775,925 barrels, valued at $44,376,656. This total was made up as follows:

Production of cement in 1908, by classes.

	Barrels.	Value.
Portland cement	51,002,612	$43,472,679
Natural cement	1,621,862	808,509
Puzzolan cement	151,451	95,468
	52,775,925	$44,376,656

The corresponding figures for the calendar year 1907 are given below for purposes of comparison:

Production of cement in 1907, by classes

	Barrels.	Value.
Portland cement	48,785,390	$53,992,551
Natural cement	2,887,700	1,467,302
Puzzolan cement	557,252	443,998
	52,230,342	$55,903,851

The Portland cement production showed a heavy decrease in 1908 as compared with 1907 in most of the Eastern and Southern States, the loss being greatest in Pennsylvania, New Jersey, New York, and Michigan. This decrease in the East and South was offset, however, by remarkable gains reported by plants in the Middle West and on the Pacific coast, returns from Indiana, Illinois, and California showing large increases over the production in 1907.

The average price of the entire Portland cement output in 1908 was only 85 cents a barrel—36 cents below the average price in 1907. The 1908 price is the lowest on record, the previous low point—88 cents a barrel—having been reached in 1904 as the result of business depression in that year.

A report on the cement industry in the United States in 1908 is now in preparation, but this notice is published in advance of that report in order to place the total figures at the disposal of those connected with the industry at the earliest possible date.

PAINT CLAY DISCOVERED

While Pike county is having all kinds of excitement about her oil and gas wells and the wonderful prospects for this mineral which seems so widely distributed over her territory, another great mineral discovery has been made. Just north of Pittsfield, Ill., a bed of mineral clay has been discovered which was analyzed, and on being worked up has proven to be valuable. From it has been made a pigment which is the basis of the beautiful red color used by artists in their most skilled work. In connection with this are beds of black and white clay which are believed to have the same valuable constituents. There is fire clay in abundance throughout the county, but the discovery of this rich paint clay has set the whole community agog, and much prospecting is being done. The oil representatives are still here taking leases and preparing to sink test wells, and as a result there will be something doing in the kingdom of Pike county in the near future.

BRICK MANUFACTURING IN KNOXVILLE ON THE BOOM

The brick manufacturing business in and around Knoxville, Tenn., is on a boom and the probabilities are that if present activity keeps up the six plants located in Knoxville territory will make about 35,000,000 brick this year, whereas, last year they only made about 25,000,000. There is always a rush in the brick business at this season when architects and contractors have finished their plans and building activity resumes its normal conditions during pretty weather. There has been five per cent more business done this spring in the brick business than was done in such length of time last year, according to the statement of a local manufacturing brick man. The year of 1907 was a banner one for the brick business until October, when brick making was checked to a certain extent. In 1908 the six plants around Knoxville made about sixty-five per cent of the number of brick they made during the year previous. One local plant that made 8,000,000 brick last year will make 15,000,000 this year and others will increase their manufacturing capacity accordingly.

As stated, there are six plants in and around Knoxville but only four of these run the year around, the remaining two being only summer plants.

The Knoxville Brick Co., which is located at Powell Station, eight miles north of Knoxville, is making decided improvements, remodeling five kilns which will cost several thousand dollars. This company makes an average of 55,000 brick per day and will increase its capacity when the kilns are remodeled. Brick are now being delivered at $7 per thousand, and the Knoxville plants, besides home consumption, have East Tennessee, Kentucky, Western North Carolina and Southwest Virginia for their shipments.

FERRIS COMPANY TO TAKE OUTPUT OF FOUR FIRMS

There has been much comment in the Columbus, O., building and contracting circles over a deal put through the last week by which the Warren B. Ferris Brick company, with offices in the Columbus Savings and Trust building, takes over the entire output of four of the largest building brick plants in Columbus.

The output of these four factories is about 30,000,000 brick a year and the company will take all which these four plants can make. Officers of the firm announced that obtaining by them of the brick from the four factories would not be followed by an advance in price but that an effort would be made to hold quotations on a stable basis. At present, for brick delivered at the building, prices range from $6.75 to $7.75 a thousand, according to quality.

It is said that these prices will not be advanced but that quotations will be held steady around these figures. In addition to the output of the local plants the company controls the output of half a dozen factories in the Hocking Valley district. Officers of the company said that the demand for face brick was almost greater than could be supplied and that they expected a very heavy demand for brick of all kinds during the entire building season of this year.

NEAREST KIN ONLY CAN GET DAMAGES

A decision of unusual interest was given by Judge Keogh in the Supreme Court, Poughkeepsie, as a result of which plaintiff who sued for $15,000 received but $50.

It was the case of Josephine Mouart of Matteawan, as administratrix of the estate of her husband, against William K. Hammond and Michael Freeman, brick manufacturers of Fishkill Landing, N. Y.

Oscar Mouart, aged 18 years, was killed in the Hammond-Freeman brick yard in 1907 while working on one of the kilns. He was ordered to the top of the kiln, where he daubed the surface of it. Gases escaped which, as alleged by the plaintiff, caused the boy's death. After his death his father was appointed administrator of his estate, and he served a notice on the brickyard firm immediately that he was about to commence action.

Five weeks later, on November 30, 1907, before the summons and complaint had been served, the father died. The mother then continued the case, suing for $15,000 for the death of her son.

The law reads that when an unmarried man dies, if his father is alive he is the next of kin; also from a ruling of the Appellate Division, it appears that damages can be recovered only by the one who was next of kin at the time of the death.

In this case the father was the next of kin. However, there remained after his death the widow and six children, and it looked as if they should have been entitled to the judgment that would have been granted to the father if he had lived. The law reads differently however, and Justice Keogh decided that the plaintiff, Mrs. Mouart, should be allowed what the loss of the son to the father amounted to during the time between their deaths. That time was five weeks. The son earned about $10 a week and the plaintiff was therefore allowed the nominal sum of $50 damages.

BRICK VENEERNG TO BE BARRED IN NORFOLK

That it is practically impossible for the method of building called brick veneer to be further used in the erection of houses in Norfolk, Va., is apparently certain, inasmuch as both the building inspector and Board of Control are fairly agreed that the plan is unwise and a menace to firemen.

A case of this character is to be heard by the board and since the only other recent instance of application for a permit to build a brick veneer house was flatly refused, it is thought the board will take similar action.

A few days ago Lieutenant C. P. Shaw applied to Building Inspector Holland for a permit to erect a residence on the brick veneer plan in Westover avenue. Mr. Holland promptly turned down the application and reported his action to the controllers. The plans which Lieut. Shaw filed at the inspector's office are for a residence of a handsome and expensive character.

Inspector Holland stated that he desires to see the method of brick veneer so generally condemned that its further employment in this city will not be thought of. He says that if he were a fireman and a house built on this plan were afire he could not be induced to go within reach of one of its walls.

MAKE GAS FROM IOWA COAL; MAY MEAN MILLIONS

Experiments under way at the Shackelford Brick Co.'s plant, Des Moines, Ia., by means of which a gas for firing brick kilns may be produced from Iowa coal, may add millions in value to Iowa factories, if successful.

Between $25,000 and $35,000 will be spent by the Shackelford concern in perfecting machinery and tools for the process.

The gas will be used for burning brick, giving a cheaper and more satisfactory fuel than ordinary coal. The discovery may even be the means of bringing pottery factories to Des Moines, for good clay is found in abundance, about the city, but the material cannot be utilized for lack of gas, which is a necessity in burning pottery.

Gas furnished by the Des Moines Gas Co., is manufactured from a certain kind of gas coal found in the regions about Pittsburgh.

BRICK PLANT SALE VOID

After a long legal argument in the Vinita, Okla., Brick plant case, Judge Brown decided that the mortgagee's sale of the plant had not been held as per law because service had not been had on the proper officers of the company. The sale to Dr. Wimer, therefore, was set aside.

Proceedings have already been started to sell the plant again in favor of the mortgagee, who has a mortgage against the company for over $3,000.00. It is not known what steps will be taken by the Burks interest in reference to this later move.

All Vinita hopes the affairs of the plant will soon be straightened out so Vinita people can buy Vinita brick for Vinita buildings now in course of construction.

NEW COMPANY RECENTLY ORGANIZED BUYS MASS CITY EQUIPMENT

The Northern Michigan Brick & Tile Co., recently organized, has bought a 50,000 brick capacity steam dryer, which will dry that number of bricks in 24 hours. It will cost about $5,000 but will be a great labor saver, and make it possible to turn out a better brick than can be produced under the old method of drying in the sun and air. The company has purchased the machinery and equipment of the Mass City (Mich.) Brick Co., paying for it with stock in the Northern Michigan Co. The equipment will be moved to the new plant as soon as the railroad siding at St. Ignace can be completed.

CHANGES IN COMPANY AT PORTSMOUTH

The retirement of J. S. Perdue as vice president, secretary and superintendent of the Portsmouth, (O.) Granite Brick Co., has caused a number of changes.

George B. Holcomb, who has been with the Peebles Paving Brick Co., will become superintendent of the concern at Fire Brick, Ky. C. W. Norris, who has been bookkeeper in the company's offices at Fire Brick, Ky., is promoted to secretary. Both are capable young men and should do well.

Mr. Perdue is forced to retire owing to ill health. He has just returned from Pinehurst, N. C., and is now preparing to go to Denver, Colorado, in hopes of the change benefitting him.

CLAY RAILROAD TIES BEING TRIED

John Murphy of the Murphy Grout Co., of Columbus, Ohio, has devised a patent tie for railroads of clay. A sample carload of the ties was made at the plant of the Wassal Brick Co., and shipped to Columbus. Within the next few weeks these ties will be given a thorough test by the Hocking Valley railroad in Columbus.

The ties are made up from the same quality of material as the Wassal paving block and are burned in the kilns. An iron rod passes through each tie from end to end. When the ties are laid in the roadbed they are placed on a patent cushion that takes up the jar caused by trains passing over them.

Experiments on the manufacture of these ties have been conducted by the Wassal brick factory for the past two years, and not until just recently was the company enabled to manufacture a tie that came up to the standard of what the inventor expected. The first idea of the inventor was to use cement in the manufacture of the tie, but this was given up because of the cost.

HUDSON RIVER TOWING LINES BUSY

The towing lines look for a brisk season in the towing of brick manufacturing centers down the river. An increased demand for brick is now being made in New York, according to brick manufacturers, and as fast as the cargoes of brick arrive in the metropolis they are purchased. Manufacturers are shipping freely and prices are a shade higher than earlier in the spring. Good hard quality of Hudson river brick readily commands $7.50 to $7.75 per 1,000.

LOCOMOTIVE TAKES PLACE OF HORSES

The Chicago Retort and Fire Brick Co., owning a large plant on the Rock Island a short distance east of Ottawa, Ill., is making preparations for some extensive improvements, and that will materially change their plan of handling clay from the beds, and give the company an opportunity to furnish clay in sufficient amounts to keep the plant in operation. The capacity of the plant has recently been increased.

In the past clay from the beds northeast of the plant has been hauled to the plant by teams, but in the future a 10-ton locomotive will furnish the power. The locomotive has arrived and the laying of the track from the plant to the clay beds will begin in a short time.

Another feature that will reduce the cost of operation is a 70-ton steamshovel that will be used in stripping the clay beds of soil and other material not used in the manufacture of brick.

WICHITA FACING A BRICK FAMINE

Contractors of Wichita are in the midst of a brick famine and buildings are being held back by the scarcity of building brick. J. Q. Hoover of the contracting firm of Hoover & Son, stated that a million brick are needed.

Brick manufacturing plants in the surrounding cities that have been idle all winter are now starting to make brick and the kilns are being burned so that brick will be ready to ship in about ten days. At present all the available stock of brick within a radius of 100 miles is being rushed into Wichita.

POTTERY NEWS ITEMS

The Klondike Pottery, East Liverpool, O., has found it necessary to substitute coal for gas in operating the plant.

Valentine Reubsam and W. C. Chill, St. Genevieve, Mo., have leased a tract containing kaolin and white clay deposits and will develop same.

The Clinton (Mo.) Stoneware Co., are in midst of the greatest activity in the history of the company, making over 6,000 gallons of ware a day.

The re-organization of the Bradshaw Pottery Co, at Niles, O., has been announced by president John G. Ingalls, as being the purpose of the petition before the court.

After a five day's run the Shenango Pottery Co., New Castle, Pa., closed down throwing 200 people out of employment. The re-organization was not completely affected.

A rich vein of potter's clay has been found on the farm, near Degonia, Ind., of Charles Schnipper, or Evansville, Ind., and with C. P. White, or Boonville, he will work the vein.

H. A. Weller has started an art pottery at Zanesville, O., in the plant of the Neilsen Pottery. Matt glazes and novelties will be made. He was formerly connected with the S. A. Weller Art Pottery Co.

The Great Western Pottery Co., Kokomo, Ind., are building two additional kilns and contemplate building an extension to the clay shops. It is also reported the Columbia Pottery will resume operations in a short time.

The Pope-Gosser China Co., Coshocton, O., are making all American China body ware, also china vases that wholesale at $40.00 a piece, the highest price ever demanded for American pottery by western manufacturers.

J. C. Beatty for years general manager of the sales department of the Sebring (O.) Pottery and H. J. Buxton and several other of the Sebring Pottery, have purchased the pottery at Columbus, Ohio, and organized a company. the 14 kiln plant. It cost $130,000 originally. Mr. Beatty is president and Mr. Buxton, manager.

SAND OR LIME BRICK OR BLOCK NEWS

A. W. Linn has established a cement brick making plant at South Bend, Wash.

Wm. Wilson, Osseo, Wis., has ordered a brick machine that will make 10,000 sand brick daily.

The Fremont (Neb.) Granite Brick Co., is putting in a switch and side-switch to their works so as to better handle their product.

William A. Whitney of Superior, Wis., and Lucian and Tom Merritt of Duluth, Minn., are planning to put in a sand-lime plant at West Duluth.

The Meracle Cement Block & Brick Co., Muskogee, Okla., has been incorporated to make brick and blocks. W. H. Shepherd is president and manager.

The Columbia Silica Co., Portage, Wis., are now at work on their new sand-lime brick plant. They expect to have one of the best plants in the entire west.

The Luverne (Minn.) Pressed Brick Co., are very busy and now have orders ahead for 350,000 brick. Other manufacturers in that city seem to be jealous of their activity.

The Duluth (Minn.) Cement Brick & Stone Co., has been incorporated with $50,000 capital stock by L. C. Harris, William Harrison and J. J. Robinson. The company will make cement brick.

The Minnesota Sand-Lime Brick Co., 33d and University Aves., Minneapolis, Minn., began making sand lime brick last week. The lime is shipped from Mason City, Ia. W. C. Brix is president of the company, and Herman Bogt treasurer and manager.

MISCELLANOUS ITEMS

The Pyrmont Brick Co., Lincoln, Cali., will build a plant at their clay pits in the near future.

Ed Barr of Mason City, Iowa, is trying to form a brick and tile company for Austin, Minn.

The Corry (Pa.) Brick & Tile Co., have commenced the manufacture of vitrified paving brick.

The Denton (Texas) Press Brick Co., is spending $50,000 in rebuilding its plant which was recently burned.

The Nanticoke (Pa.) Brick Co., are increasing the capacity of their brick plant at Mifflinville from 30,000 to 90,000 brick daily.

The Dows (Ia.) Brick & Tile Works has commenced the season's run after a force of men have been working on improvements.

The Kankakee (Ills.) Brick & Tile Co., are running a switch into the works so as to save the loading and unloading of brick and tile for shipping.

The Cassville (Wis.) Brick Works have been bought from Geo. W. Barrows by the three Braun Bros., who will install new machinery and operate same.

The Ft. Dodge (Ia.) Brick & Tile Co.'s plant is now replaced with a much better and larger plant than the one that burned last fall. It is now in full operation.

J. H. Krittenbrink is building a brick-making plant at 36th and Wright Streets, Omaha, Neb., which the citizens in the neighborhood are very strongly objecting to.

Jacob Hockers, West De Pere, Wis., is enlarging his brick plant. An order has been placed for an 80 h. p. boiler and engine and other labor-saving machinery will be installed.

The Valleyford (Wash.) Brick & Tile Co., have received their machinery from the C. W. Raymond Co., and same will be in operation by May 1st. C. M. Pike is installing same.

The Lyle Clay Co., South River, N. J., has been incorporated with $100,000 capital stock by W. A. Snow, of Montclair, W. Ferguson and F. W. Cameron, of New York.

The Cincinnati (O.) Clay Products & Supply Co., has been incorporated with $15,000 capital stock by John M. Stoner, B. C. Jacobus, Jr., Wm. H. Gets, S. J. Riggs and James M. Stone.

The Manitowoc (Wis.) Clay Products Co., have purchased and installed machinery for the manufacture of tile and hollow building blocks. Several new down draft kilns will also be built.

The Pittsburgh-Buffalo Co., Pittsburgh, Pa. are burning 100,000 building and paving brick daily in kilns constructed by the Wilson Kiln & Dryer Co., cuts of which can be seen on page 45.

The plant of the Standard Brick Co., at Lima, O., was purchased by J. R. Riekhoff of the Lima Tea Co., for $7,000. The plant will be enlarged and a strong company formed to take over its affairs.

The Ft. Smith (Ark.) Vitrified Brick Co., has been incorporated with $100,000 capital stock. The officers are A. J. Yoke, president; Frank Brown, vice-president; and R. F. Dickens, secretary and treasurer.

The Smithfield (Utah) Brick & Tile Co., has been incorporated with $50,000 capital stock. The officers are George P. Toolson, president, E. R. Miller, vice-president, C. W. Claypool secretary, and George G. Smith treasurer.

The New Brick Co., Grand Rapids, Mich., has been organized with $30,000 capital stock to take over the business and plant of the Valley City Brick Co., at Fuller and East Bridge streets. The Veneklassen's of Zeeland will have the management of the property.

E. T. Lewis will establish a brick plant at Middlesex, N. C.

The Tulsa (Okla.) Brick Co., is installing a new Dry Press Brick machine.

The Harbison-Walker Refractories Co., are dismantling their South Webster, O., plant.

Sam Kahn has purchased the Blakely (Minn.) Brick Works and will operate same this season.

The Star Clay Works at Mertztown, Pa., which have been idle for several months, have resumed operations.

Senator Leutz, president of the Hebron, (N. Dak.) Pressed Brick Co., is considering the starting of a plant at Glen Allin.

John Wiebe, who only purchased an interest in the Beatrice (Neb.) Brick Works from R. Klose, has sold same to Don McColery.

The Minter City, (Miss) Brick & Tile Co., will install additional machinery. They have increased their capital stock to $30,000.

At a meeting of the stockholders of the Cary Brick Co., Mechanicsville, N. Y., it was decided to increase the capital stock of the company from $200,000 to $300,000.

The Simons Brick Co., of Los Angeles. Cal., will locate a tile factory near El Centro, Cal. They have purchased a fifty acre tract upon which to build the factory.

The Commercial Association of Longmont, Col., have secured a brick and tile works for that city, provided they would furnish a certain amount of the capital.

The Gomez Palacio (Mexico) Brick Co., will increase their capital stock and enlarge their plant, pressed brick machine and make other improvements about the plant.

The Rensselaer (N. Y.) Brick Co.'s plant which has been idle for many months, will resume operations within a few days, having secured out-of-town orders for a season's run.

The Stulton (Pa.) & Harrisburg Brick Co., have added improved machines to their plant and made extensive repairs. A superior quality of brick will be made this season.

The Pawhuska (Okla.) Brick Co., has been incorporated with $30,000 capital stock by J. M. Parkins, of Humboldt, Kansas, and others; the capacity of the plant is 50,000 daily.

The Shenandoah (Ia.) Brick & Tile Works and the Lake & Cotrill Brick & Tile Works have consolidated and a new company formed under the latter name, and $30,000 capital stock, with D. S. Lake as manager. New equipments and the enlargement of both plants will be started at once.

George Chaasdon and Herman M. Zapel, of Chicago, Ill., have bought land at Kettle Falls, Wash., and will build and operate a brick plant. Mr. Zapel is of the Northside family of brick makers.

The Baltic (O.) Brick & Tile Co., has been organized and Wm. Lautz is president; E. M. Domer, vice-president; W. M. Shutt, treasures and D. J. Lautz, secretary. They will rebuild the old plant so as to work the year round.

The Murphysboro (Ill.) Paving Brick Co., has been incorporated with $100,000 capital stock. The incorporators are W. H. Hill, H. H. Jenkins and H. C. Barnard. They have bought 60 acres of shale from the Gartside Coal Co.

The Meek Brick & Tile Co., Chillicothe, Mo., has been incorporated with $50,000 capital stock, all of which has been subscribed. The following directors are elected: M. R. Jenkins, Frank Adams, Joseph Wallbaunn, J. E. Meek and B. J. Meek.

The Crawfordsville (Ind.) Shale Brick Co., has started up after being shut down to add six more kilns and a 150 horse-power boiler and engine. James E. Evans is president, J. A. Gilbert, vice-president, Bruce Luckett secretary and treasurer and John Ferguson superintendent.

The rebuilding of the Streator (Ill.) Clay Mfg. Co., plant which burned recently, is progressing rapidly. The new buildings will be of brick.

E. O. Lovette, who recently purchased the Marengo, (Ia.) Brick & Tile Works of J. A. Wagner, is overseeing repairs so as to soon put the plant into operation.

Jesse Bradley, of Mooresville, Ind., will remove his shale brick plant to Clayton, where he will make 40,000 brick and work the plant the year round. New kilns will be built.

The property of the Seward, (Pa.) Brick Co., has been bought by J. B. Kennerly, of Philadelphia for $75,000. He will start operations at once.

Mayor M. H. Tierney, of Piedmont, W. Va., has purchased the plant of the Piedmont Brick & Coal Co., near Piedmont, for $7,000.

Dr. Thomas who owns a fine shale bed near Lucasville, O., expects to build a small brick plant this season and if successful will then build a large one.

Frank Carrier has purchased the Aberdeen (S. Dak.) Brick Co. works and will enlarge the plant and make hard sand mold brick.

F. A. White, superintendent of the Versailles, (Mo.) Fire Brick Works, has purchased a 302 acre farm south of town. Possession to be given at once.

The Flint River Brick Co., Albany, Ga., has been organized with $50,000 capital stock, and the well known N. J. Cruger will head the company as president; Paul J. Brown, vice-president, and James Nesbitt, secretary and treasurer. They have taken over the Cruger & Pace, and Albany Brick Co.'s, and will build another plant on the east side of the river, having 15,000,000 capacity.

On account of the success of the plant which was started at Bloomfield, Ind., last year, two other plants are being considered, one by local people and the other by Indianapolis parties.

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

The Lofland Brick Co., Milton, Del., has been incorporated with $50,000 capital stock.

The Mt. Jewett, (Pa.) Fire Brick Co., has changed its name to the Kushequa Keramic Co.

Feely, Minn., is to have a $40,000 brick yard; the final arrangements have already been made.

Will North of Portland, and others, have bought clay land at Bluffton, Ind., and will locate a tile factory there.

The Scandia Brick & Tile Co., Madrid, Ia., will erect a two story brick building 100x40 and install additional brick machinery.

The Rapid City, (S. Dak.) Brick & Tile Co., have installed additional machinery so as to keep up with orders. Guy Marshall is the superintendent.

A. P. Dyke, Hope, Ark., makes a splendid offer to anyone looking for a location for a brick or tile plant. See his ad on page 36 of this issue.

A movement is on foot to enlarge the Fayette Pressed Brick Co.'s plant so as to make paving brick, taking in the plant owned by Joseph Gantner.

The Sheldon Brick Co., Champaign, Ill., has installed a 60,000 daily capacity brick machine in their Urbana yard. The works are started for the season.

A. V. Perron, who had charge of the brick works at Walkers Mills, has bought a half interest in the plant of Mike Sheppard at Canonsburg, Pa. The plant will be enlarged.

J. N. Hairgrove of Vinden, and E. T. Harrison of Waverly, under the name of Hairgrove & Harrison, have bought land at Jacksonville, Ill., and will build a brick and tile plant that will cost $50,000.

What was formerly the Interstate Clay Co.'s plant at Blandon, Pa., has been bought by a Philadelphia party and conducted under the name Blandon Clay Co. A contract has been awarded to enlarge the plant.

The Alden Clay Products Co., Crandon, Wis., has reduced its capital stock from $50,000 to $25,000.

The De Costa (N. J.) Brick Co., capitalized at $20,000, has been incorporated by William Doerr Jr., David Doerr and Andrew G. Stewart.

The Bachelor Brick & Tile Co., Angola, Ind., is increasing the capacity of their plant one half and making additions to their drying sheds.

George Husman of Talulla, Ill., has traded the Talulla Electric Light, Tile & Brick Co., for 500 acres of land at Shelbyville, Mo., possession Jan. 1, 1910.

Henry W. Whiting of Minneapolis, Minn., will erect a clay products plant, capitalized at $300,000 on the Bier farm, five miles west of New Ulm, Minn.

The Cunningham Brick Co., Greensboro, N. C., has been incorporated with $25,000 capital stock by J. H. Cunningham, C. D. Cunningham and W. H. Osborne.

The Osnaburg Brick Co., Canton, O., has been incorporated with $25,000 capital stock, by Enos A. Stewart, Albert Smith, Hiram Doel, G. A. Smith and others.

The Ballard Brick Co., Seattle, Wash., has been incorporated with $60,000 capital stock, by W. C. Mitchell, F. Z Heidrick, Walter Fellows, all of Seattle. The plant is at Ballard.

The Dickinson Brick & Tile Co., has been incorporated with $18,000 capital stock to operate a plant in Barron Co., Ky. Incorporators are B. Dickinson, B. G. Dickinson and W. D. Dickinson.

The Monongahela, (Pa.) Clay & Brick Co., has been organized and purchased 37 acres of land in Fayette Co., which has five distinct veins of fire clay. Those interested are: H. T. Billick, G. K. Hays, W. H. Dutman, W. C. McAllister, R. O. Keeney, H. C. Sutman, T. M. Hall and others.

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

611 CARMEN AVE. CHICAGO

WANTED

A practical man with experience to take charge of good brick and tile plant. Must have $1000 to $15000 to put into the business with us. Good opportunity to the right party

Uniontown Brick & Tile Co.
Uniontown, Ky.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
I three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
I dry press mixer.
2 small engines.

Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

Southern Brick & Tile Co.
Louisville, Ky.

GOOD PLANT FOR SALE

At a reasonable price a well equipped brick plant in town of 4000, county seat; Frisco, Missouri Pacific, and M. K. & T railroads. Forty-two miles from Kansas City. Good machinery, fine shale and excellent water, capacity 30,000, town just paving streets; will put in several blocks this season. Have contract for new city building to aggregate 200,000 brick. Will sell at reasonable figure, turning all business over to purchaser. This plant is for sale on account of death of Dr. A. Reichard, proprietor. For further information address

WALTER V REICHARD.
Paola. Kansas.

FOR SALE

Profitable brick plant and business; 20,000 capacity. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago. Ill.

FOR SALE
SECOND HAND MACHINERY

Two Heine Boilers 100 and 125 h. p.
One No. 4 Dean Pump 2¼ in. to 1½
One McGowan & Co. 6 in. to 6 in
One Blake 6 in. to 6 in.
One Erie Engine 75 h. p.
One No. 7 Dean 4in. to 6 in.
One Blake 3 in to 4 in.
Two Cameron 3 in. to 4 in.

Three Centrifugal pumps 4⅓ in. to 2½ in. and 3½ in. to 2½ in. Two 30 in. and one 50 in Buffulo Force Fans. One Stutervant 70 in. fan. 200 steel trucks suitable for brickyards. 41 brick cars Chambers make One Planer & Matcher. One Band Resaw. Two Freight Elevators. One Andree Mill One No, 2 and No 3 Mead Mill. Four 32 in and one 42 in. Munson Mills.

The above machinery has been used only a short time.

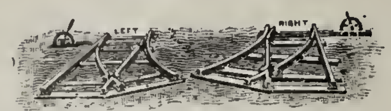
S. KRUG WRECKING CO.
Nebraska City, Neb.

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.

Address Brick Supt.,
P. O. Box 81, Coffeyville, Kans.

FOR SALE



Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co
Cleveland, Ohio

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Bensing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32.000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12.000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address

J. M. CRABILL,
Clarinda, Iowa.

Clay and Coal For Sale or Lease

Have 1,500 acres of the celebrated Carter Co. fire clay and coal land to sell very reasonable or lease on royalty. Three veins of fire clay and one three and one-half foot of coal in same hills at Denton, Ky., on line of two railroads.

Fine prospect for oil and gas.

Address: J. H. BURDETTE,
622 West Caster Ave.,
Ashland. Ky,

FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer
25 sand lime brick cars. 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO.
Norristown, Pa.

For Sale at a Bargain

Soft mud brick plant, one Hercules brick machine made by Horton Mfg. Co., one crusher, one sander, one clay elevator, one boiler, one engine, pulleys, belting, shafting, etc.; 11000 pallets, 10x36 inches; Racks for 80,000 brick; kiln doors, grate bars, barrows, trucks. Everything necessary for brick yard. Capacity 20,000 brick daily. Only two million brick have been made on this machinery which was bought new. Address, J. S. COLLINS,

Frankfort, Ky.

Invest in Pressed Brick & Tile Plant

IN HOPE, Arkansas, where we have four railroads in daily operation, fifth line building and sixth lately surveyed.

Hope is 93 feet higher than the city of Little Rock; **is highest point on main line I. M. & S. Ry., in Arkansas**, has a population of 5,303 and is steadily growing. **We have the best water, mild climate and healthy location.**

A plant making pressed brick and tiling is very much needed here, as now all our first-class building brick and all tiling are shipped here at $16 to $30 per thousand for pressed brick and **five cents per foot for the cheapest 4-inch farm drain tile.**

Large territory to be supplied from here. One mud brick plant here, but **no other clay plant of any nature.**

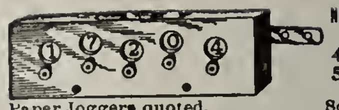
Excellent shale for this business just outside of corporation on prominent railroad This 40 acres of shale land can be had at the low price of $40 per acre. This land is so close to town that it is **worth the price without consideration of the valuable shale.**

Good practical brick makers have already made pressed brick from this shale and would, if you wish, invest a few thousand dollars in the plant.

Come and go over the proposition when I feel confident that you will be more than pleased with the outlook, and will, no doubt, wonder why such a plant has not long since been located here.

I have samples of brick to show test of shale, and you are invited to personally examine and test it yourself. Address, A. P. DYKE,

Factory Locations and Land Broker,
Hope, Arkansas.



No better made, cut iron $8 and $10, to
4 Wheel, $3 00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers

Paper Joggers quoted.
R. A. HART. 41 White St., BATTLE CREEK. MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machine; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7.00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments W. L. JONES,

Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick. Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR TRADE

Well equipped brick and tile plant in central Iowa. Everything complete and ready for business. Plant cost $20.000 and will pay good dividend at that figure What have you to offer? Will conider good land (prefer clear land as plant is unencumbered) in exchange. Give legal description, price and fullest particulars in first letter

Address Owner.
Box 253. St. Paul, Minn

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana."
Care Clay Record. Chicago, Ill.

WANTED

Man to operate dry press brick plant. Daily capacity 20,000. Must understand machinery, also setting and burning of brick. State age, experience, salary and references.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE

Brick Yard for sale, only yard in city of 7000; modern machinery; only bed of clay suited for brick; nearest competitor 30 miles Good reason for selling. A fine chance for a practical brick manufacturer. Address:

ADAM PAULUS
Marshfield, Wis.

WANTED

A position as manager, sales manager or superintendent by a young man with fourteen years practical experience in the brick business in all its details from clay pit to scaffold; together with a thorough knowledge in the most up-to-date methods in use in the various plants throughout the country. A-1 references.

Address N. Y.
Care of Clay Record, Chicago.

WANTED

One second-hand medium size steam shovel for handling clay or sand.

Address E. J. KELLER,
Lexington, Okla.

FOR SALE

Vol. 1 of Sager's Collected Works. Book is in splendid condition. Price only $5. Answer at once.

Book, care of Clay Record,
Chicago

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS-Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY
1413-G Street, N. W.
ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,
(Copy) ELLIOTT S. MORSE.

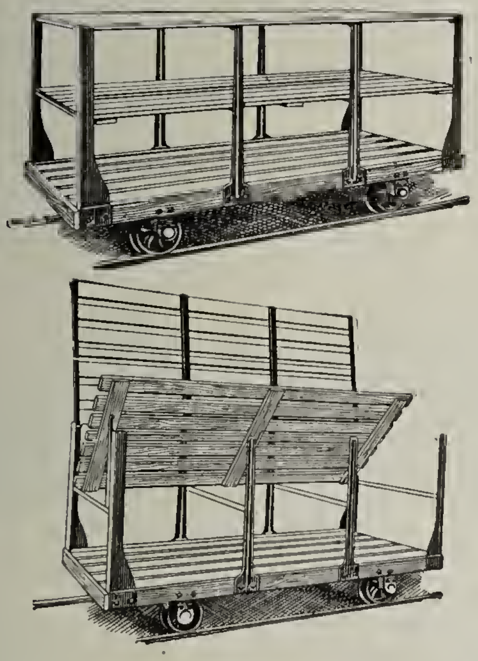
That which we have done for the above Company we can do for You. We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

THE KING ENGINEERING COMPANY

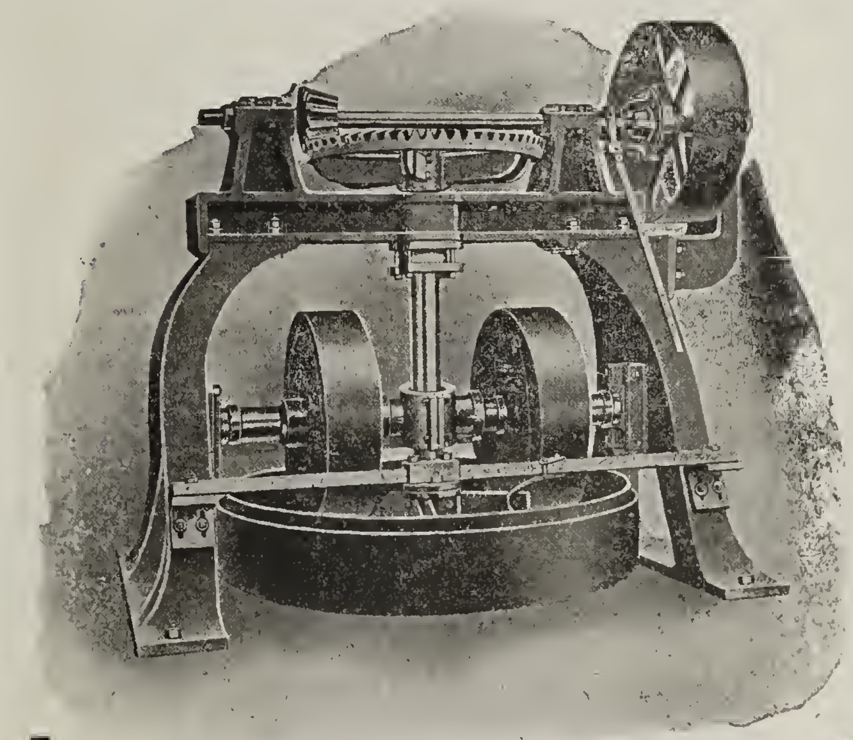
RICHMOND, VA.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

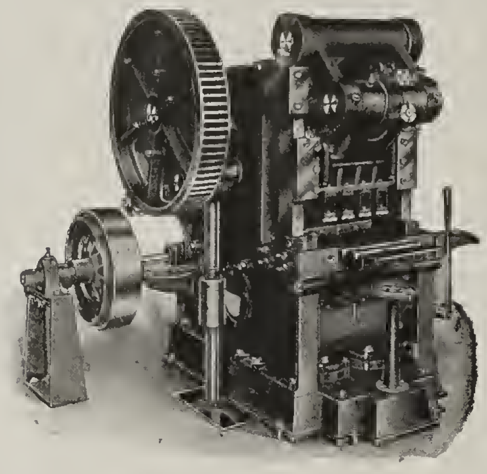
When writing for prices state kind of material and capacity required.

Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

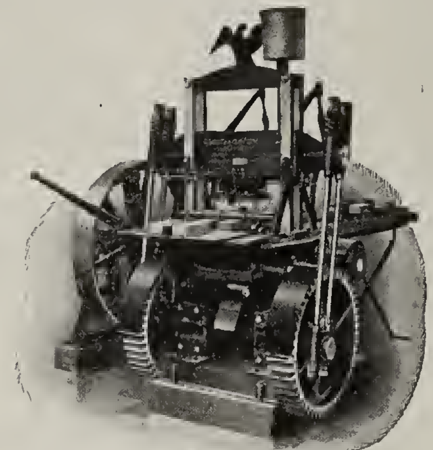
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

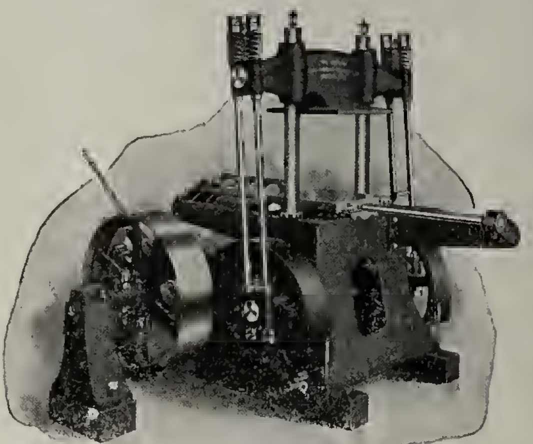
BUCYRUS OHIO, U.S.A.



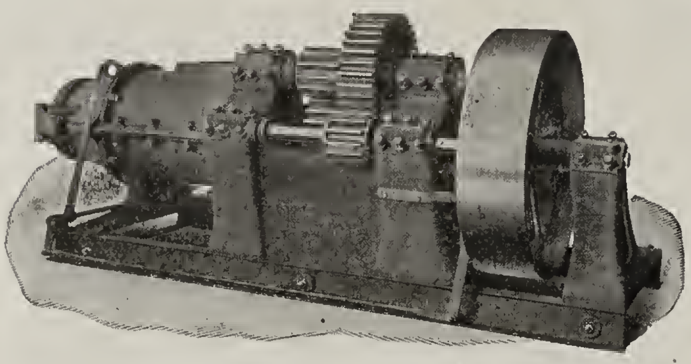
Model "B" Dry Press



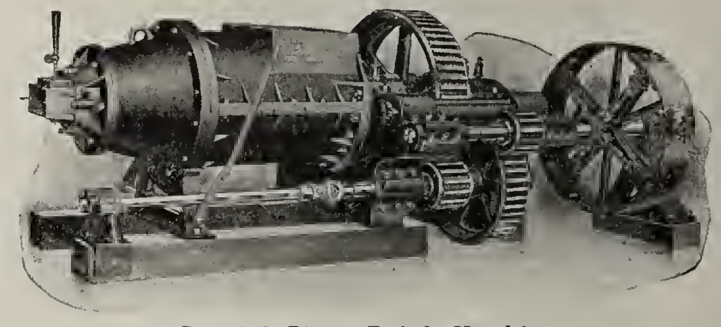
Eagle Repress



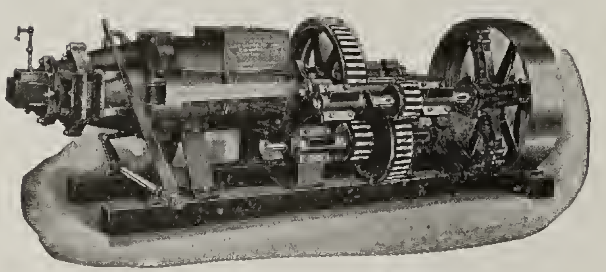
Roofing Tile Press



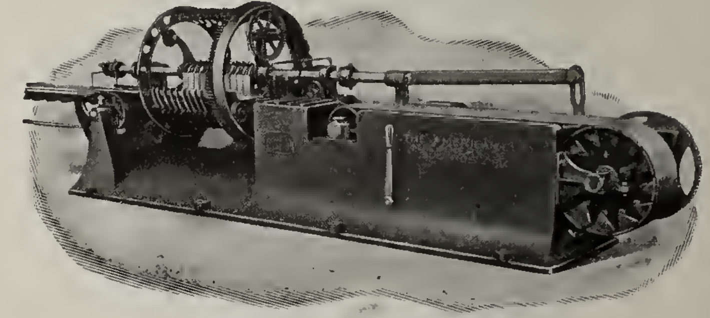
No. 65 Auger Brick Machine



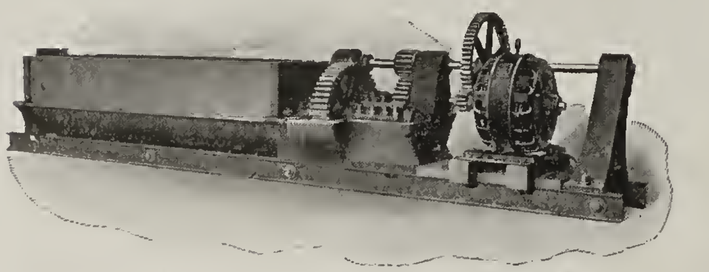
Special Giant Brick Machine



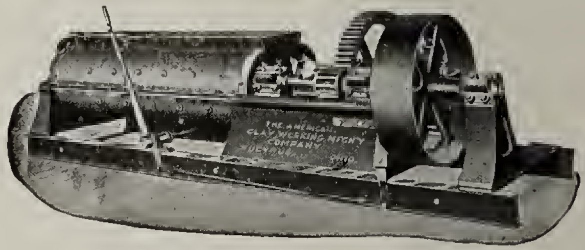
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



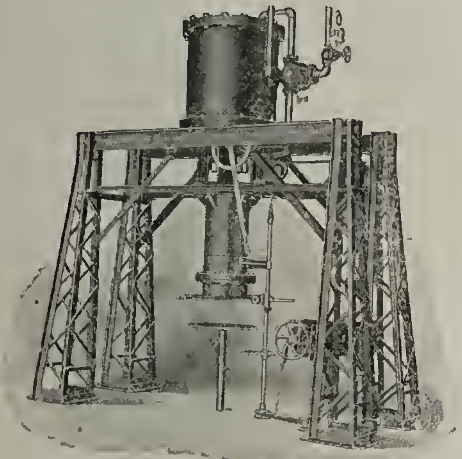
No. 38 Double Shaft Pug Mill

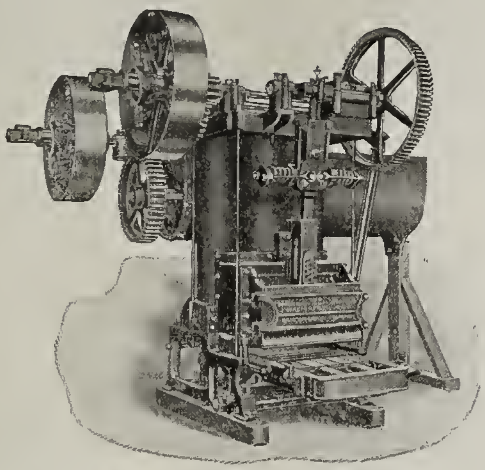
We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

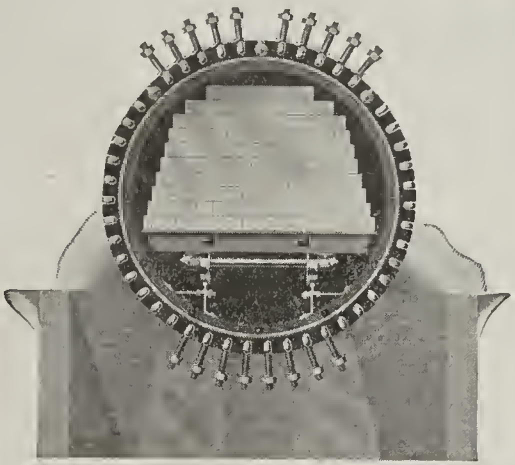
THE AMERICAN CLAY MACHINERY COMPANY

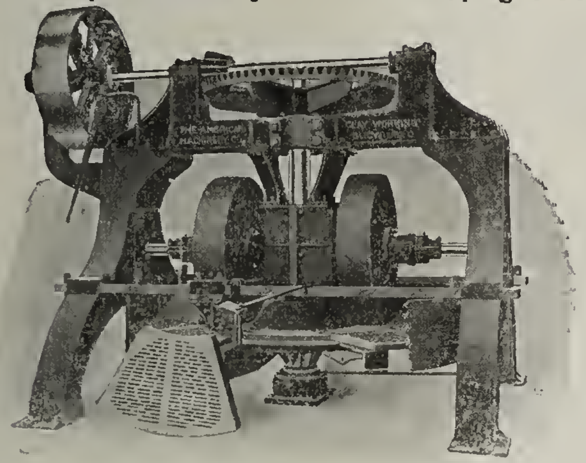
BUILT RIGHT RUN RIGHT

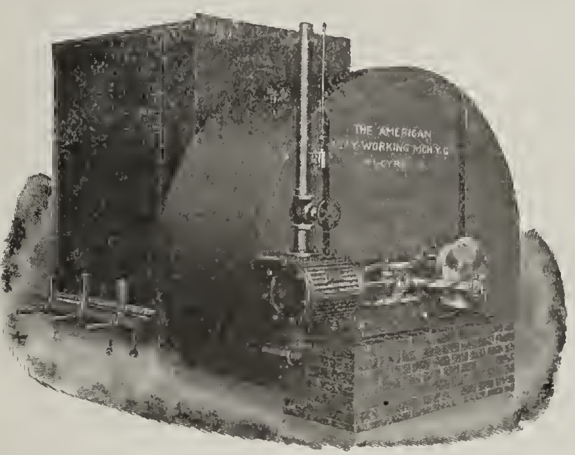
BUCYRUS OHIO, U. S. A.


Sewer Pipe Machinery

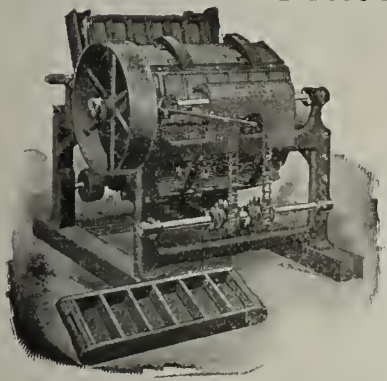

Upright Stock Brick Machine

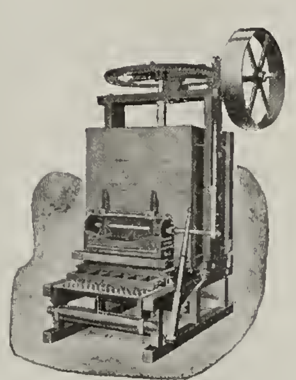

Sand-Lime Brick Machinery

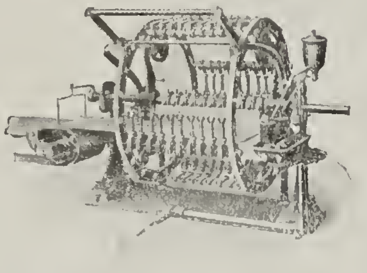

9 Foot Dry Pan

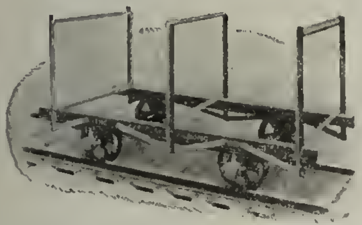


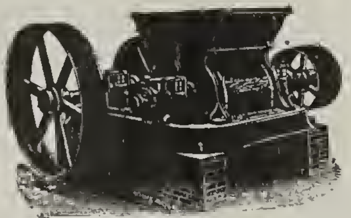
Blower Dryer Apparatus


Mold Sander


H. P. Brick Machine


No. 62 Hand Power Cutter


Dry Cars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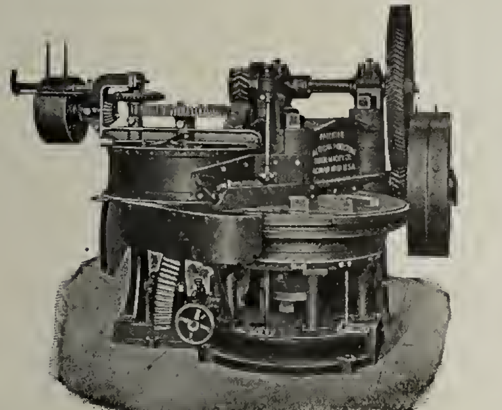
The American Sandstone Brick Machinery Co.
INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



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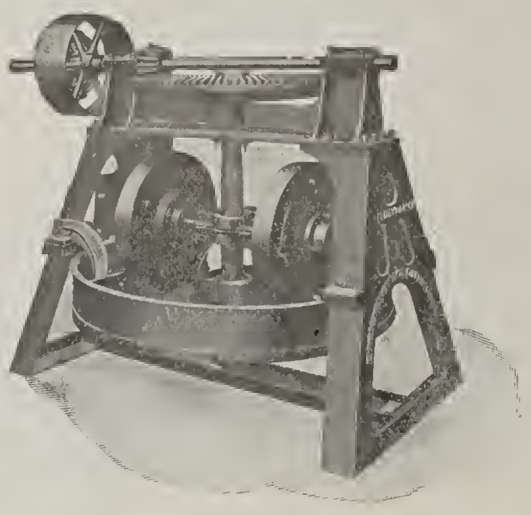

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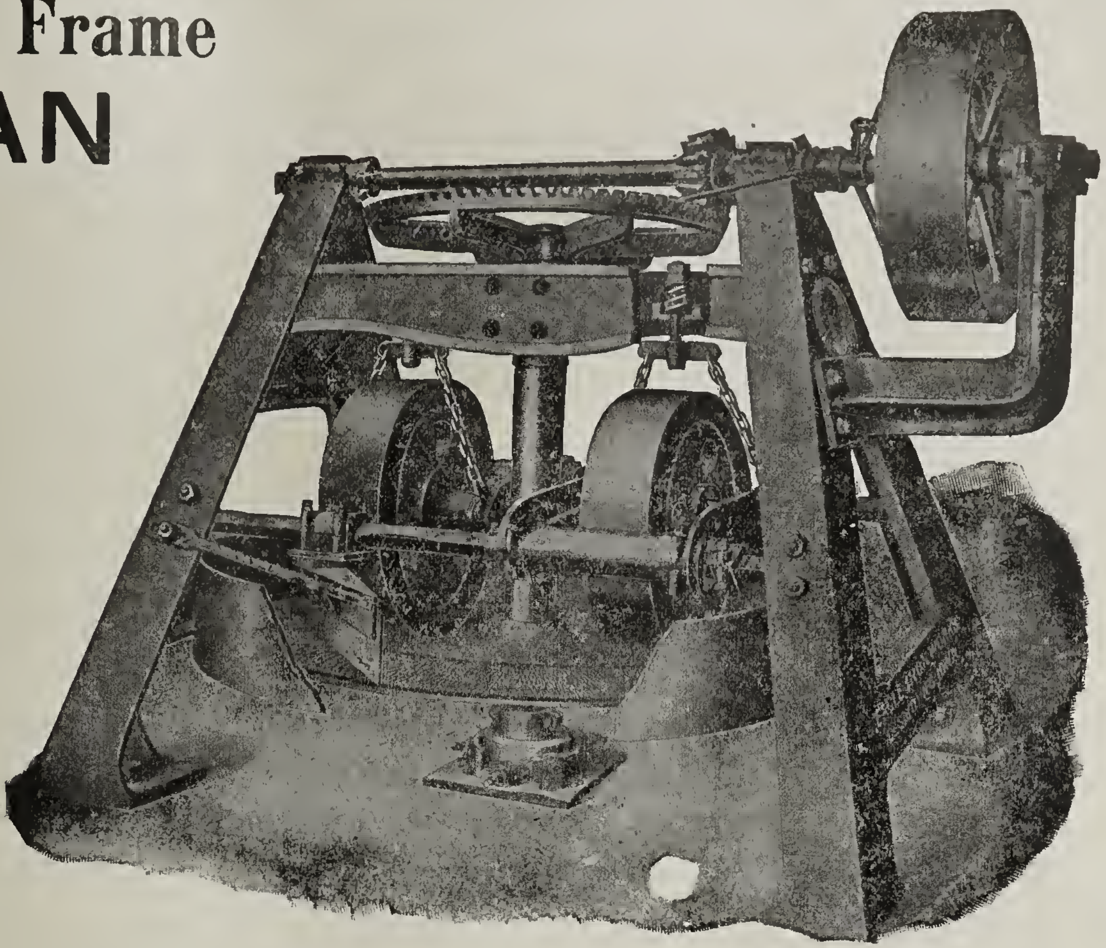

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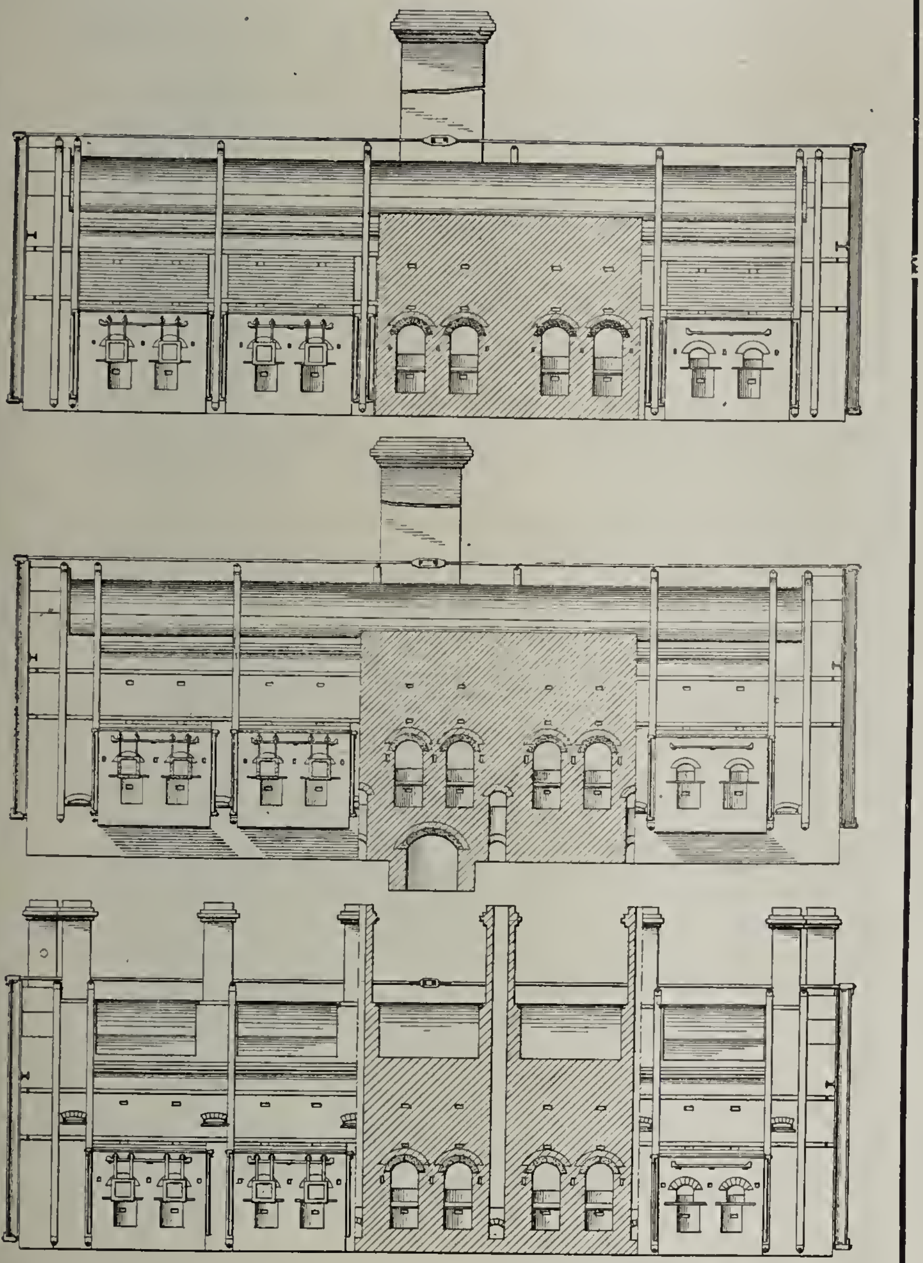
Wilson Kilns and Dryers



Patented July 8, 1902. No. 704418

Patented March 3, 1903. No. 721988

THOMAS M. WILSON

Mr. Wilson is the Inventor and Patentee of the Wilson Kilns and Dryers, including the smoke consuming furnaces which will burn brick without smoke, also the Continuous Waste Heat System, which does away with the smoke nuisance.

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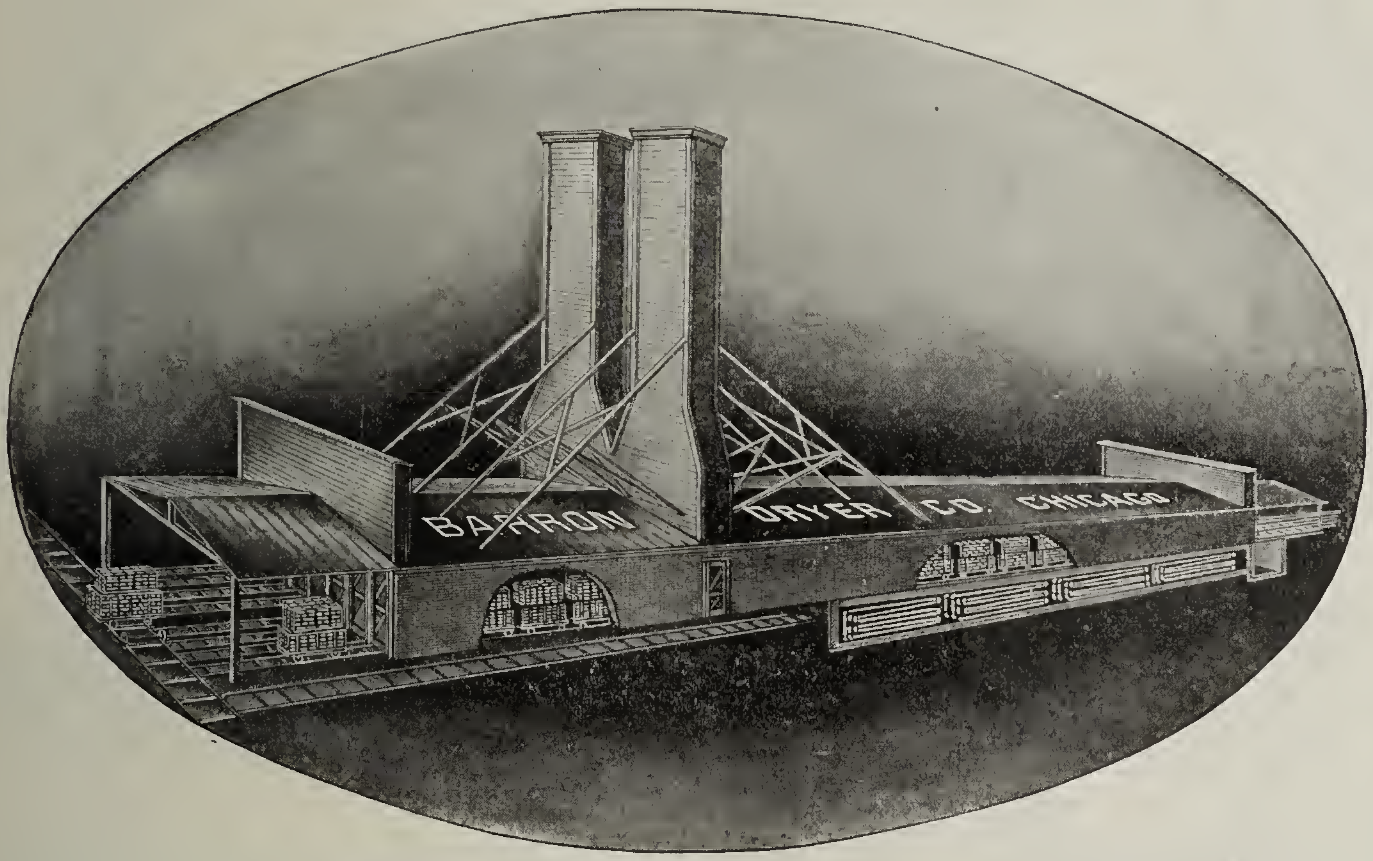

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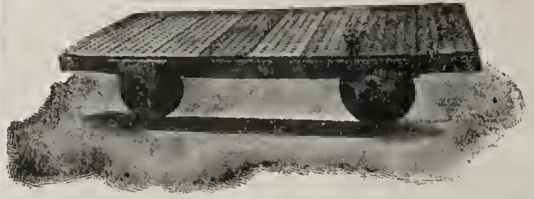
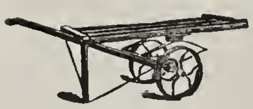


DRYER CARS



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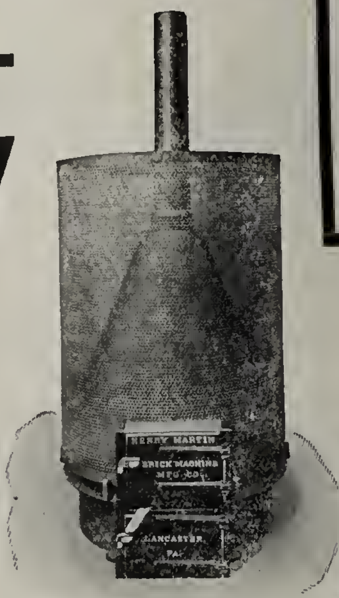

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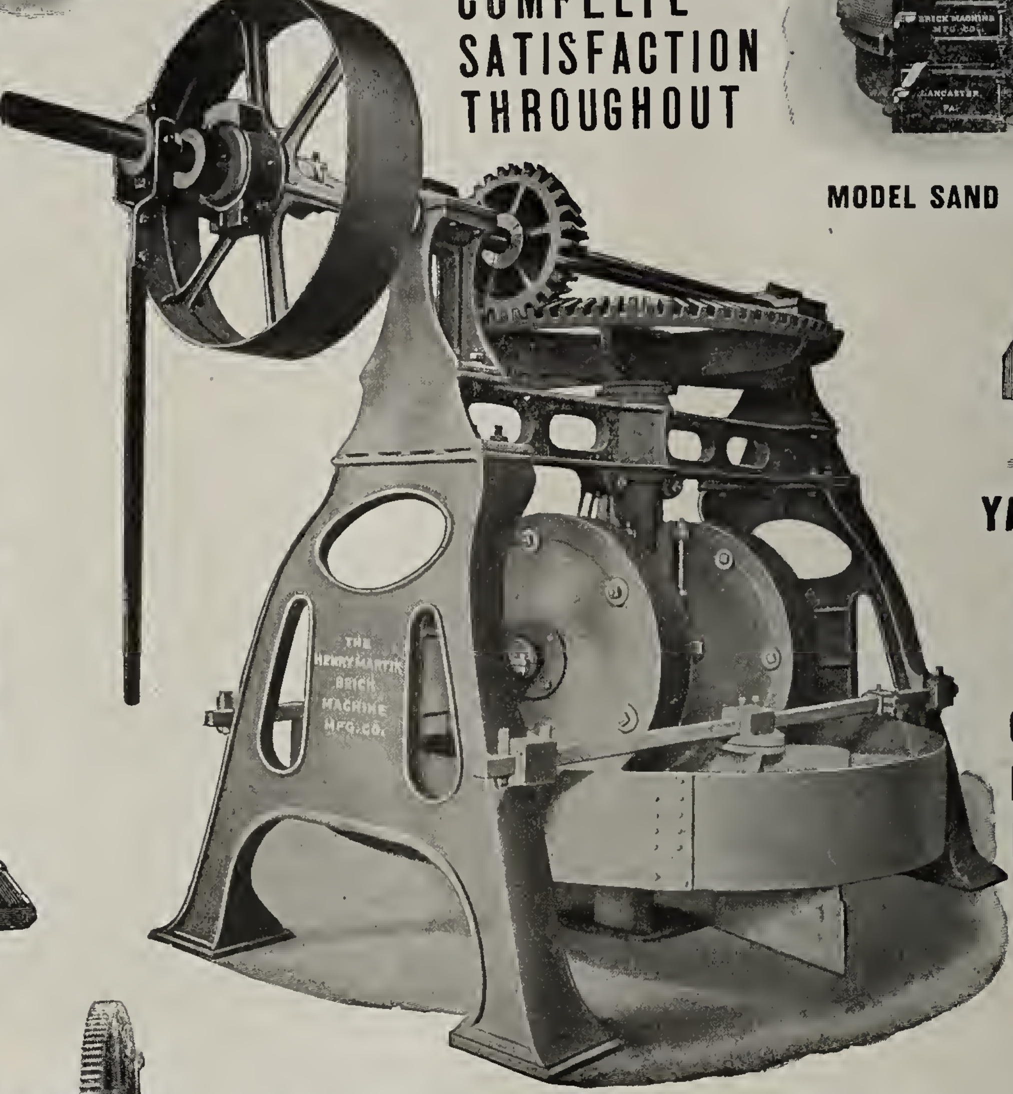

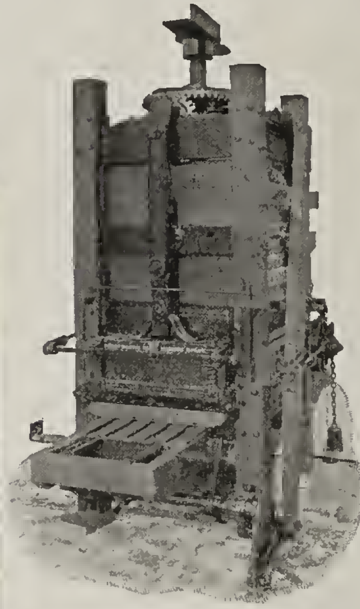

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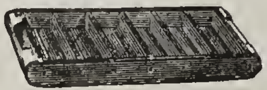

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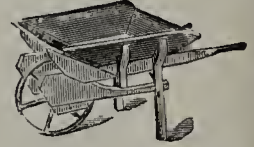

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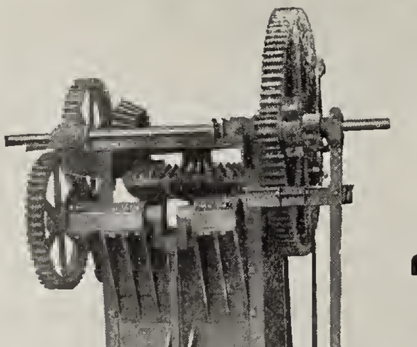

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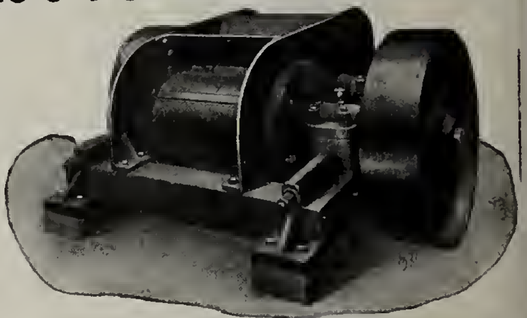

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October 10, 1905, No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

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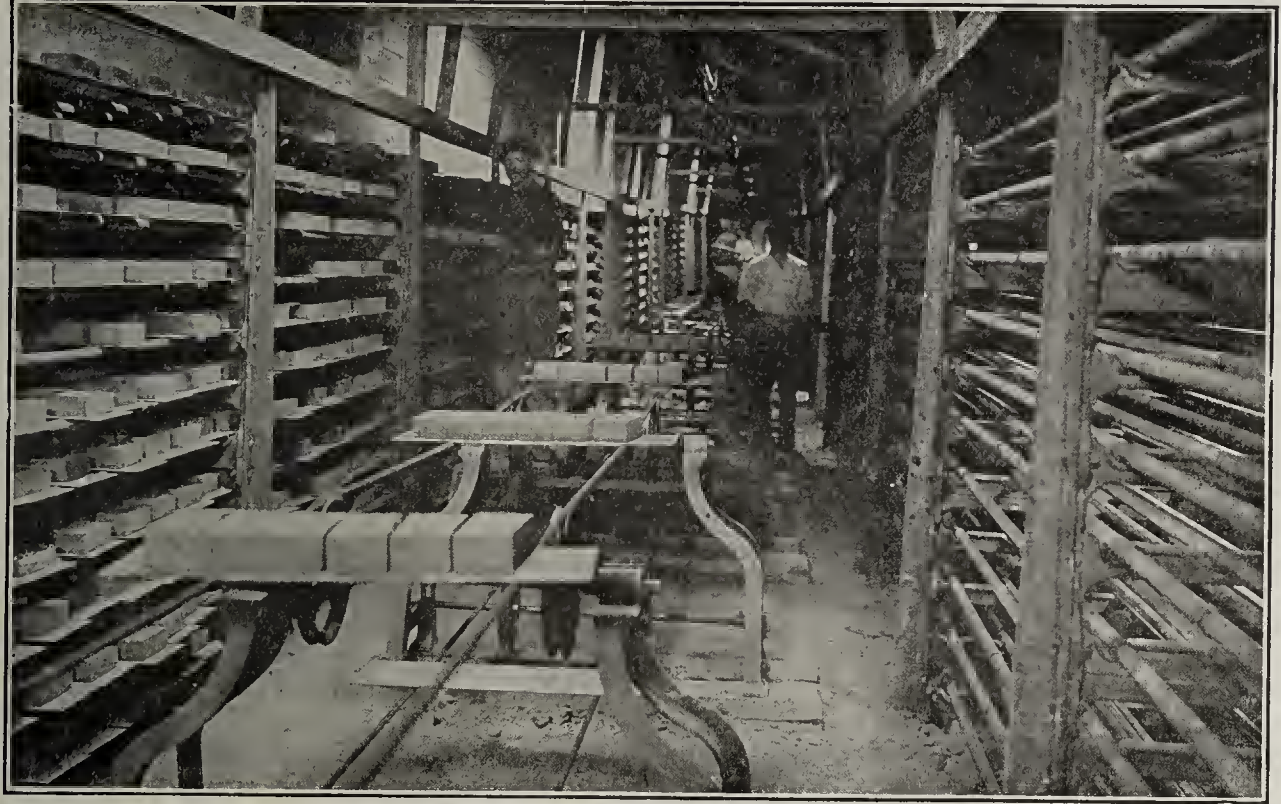

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The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

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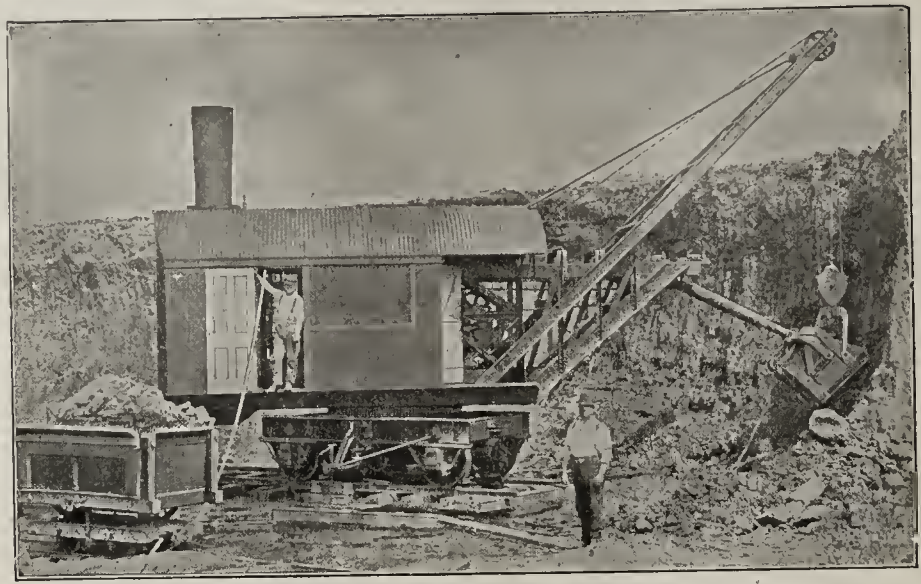

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Operated by one man for outputs up to 125,000 brick per day.

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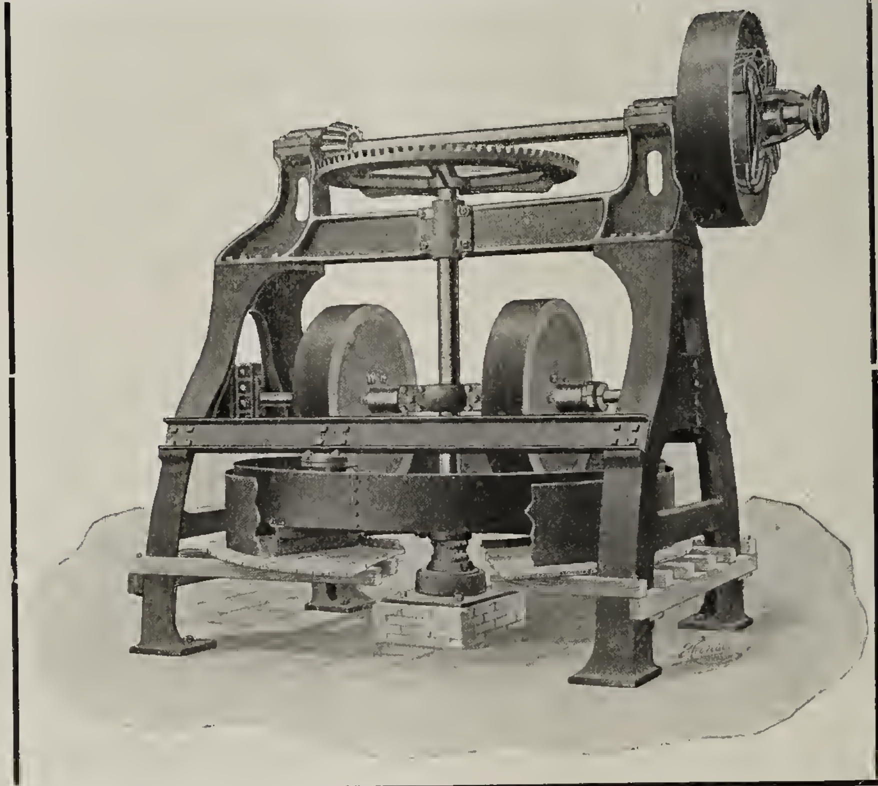

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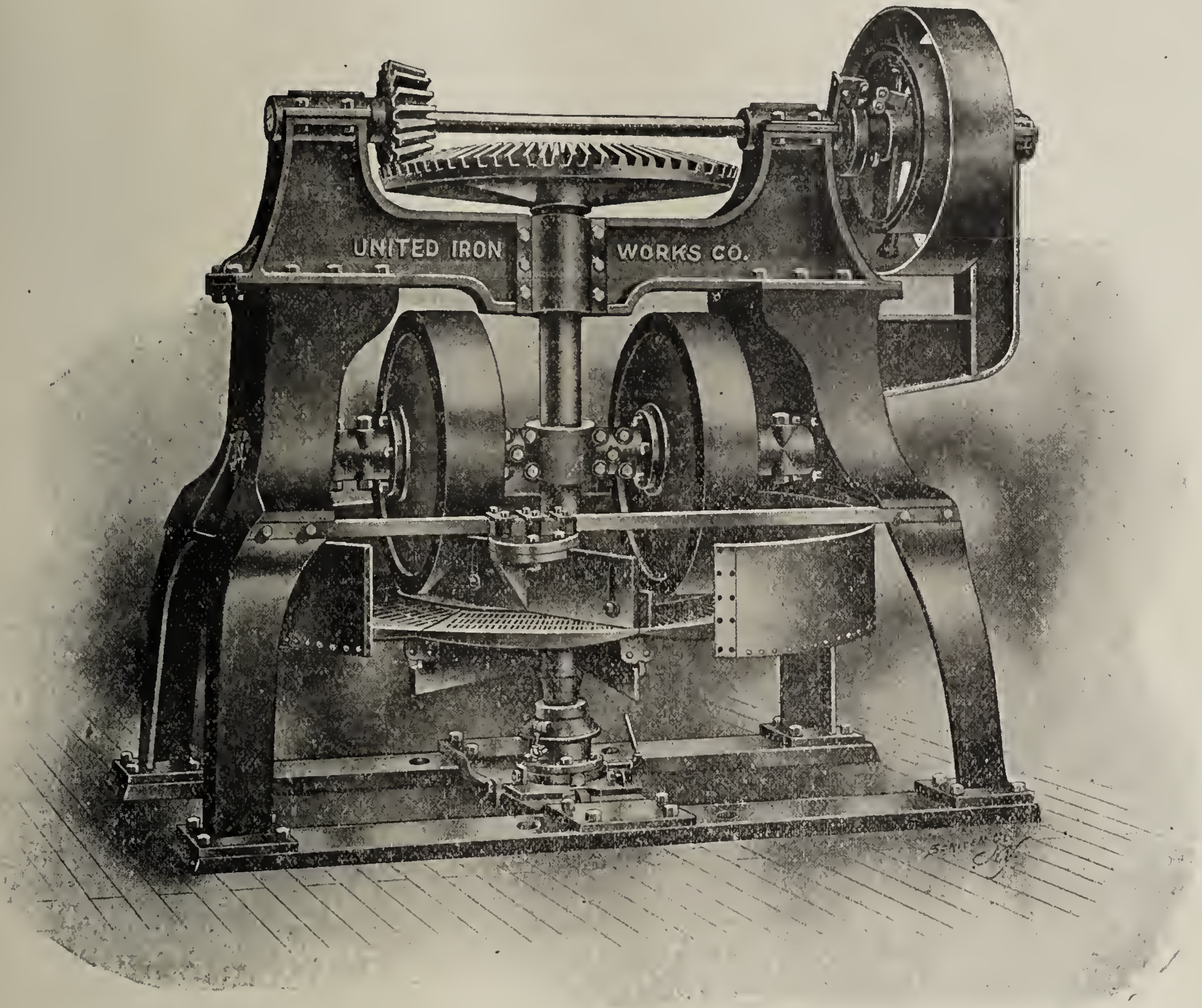
The TURNER VAUGHN & TAYLOR CO.

Cuyahoga Falls, Ohio, U. S. A.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Yours truly,
WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

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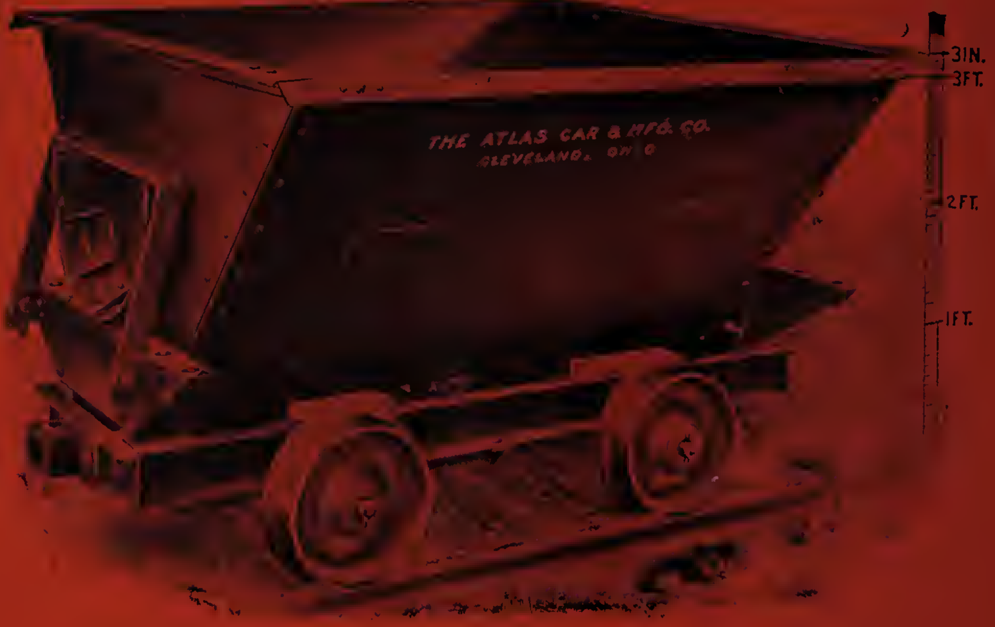

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CLEVELAND, OHIO

Vol. 34 No. 9

CLAY RECORD

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THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
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May 15, 1909

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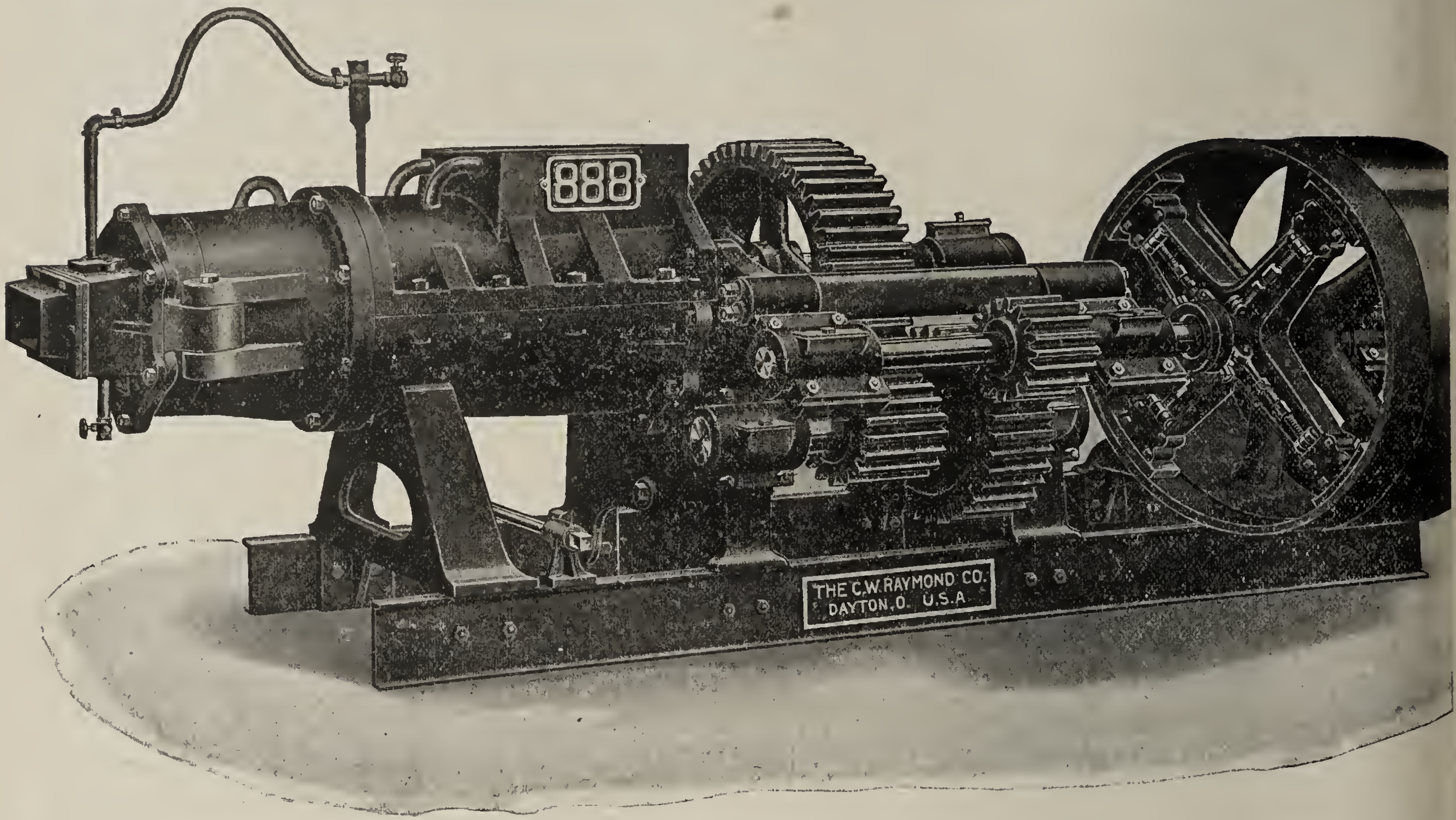

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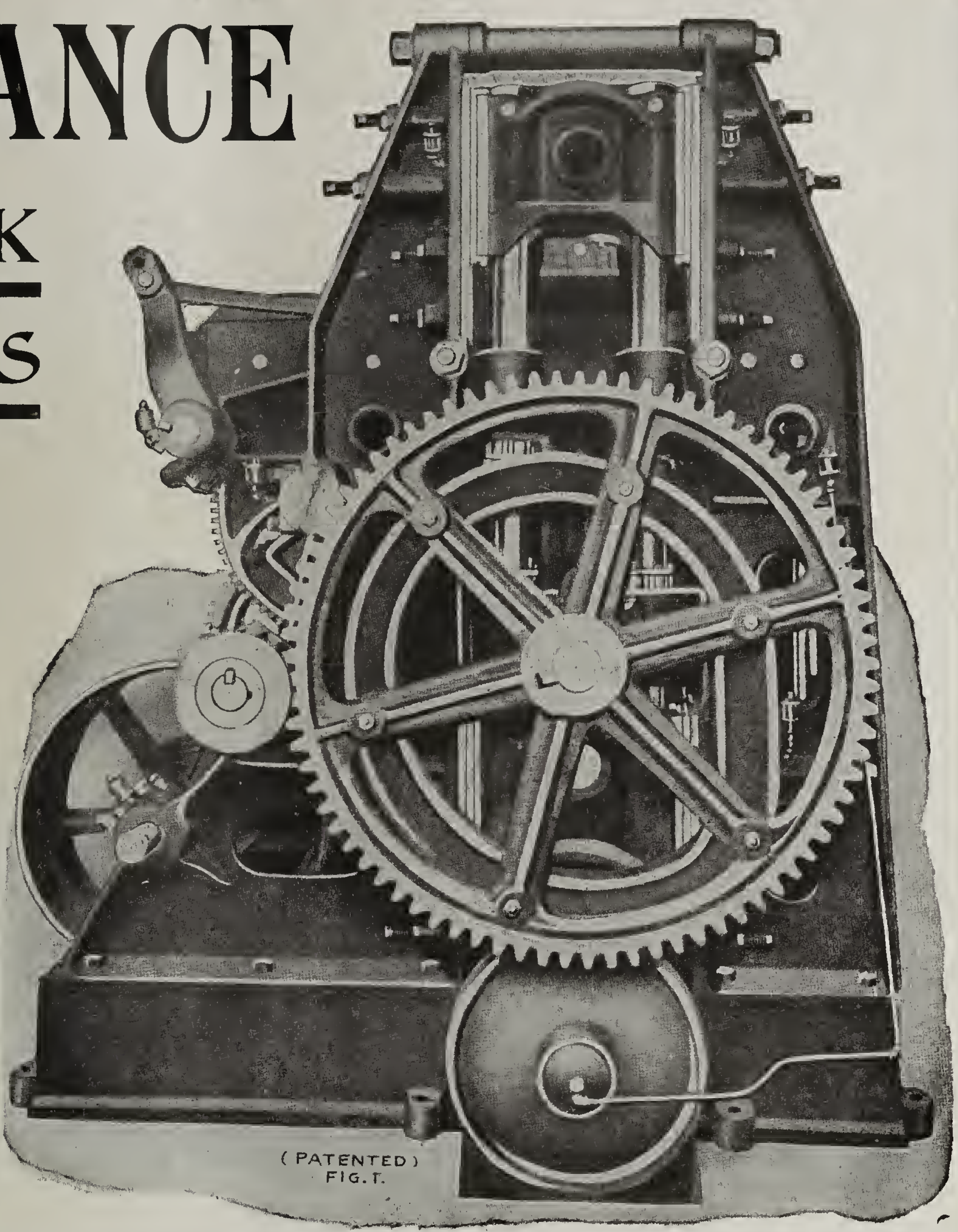

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FIG. T.

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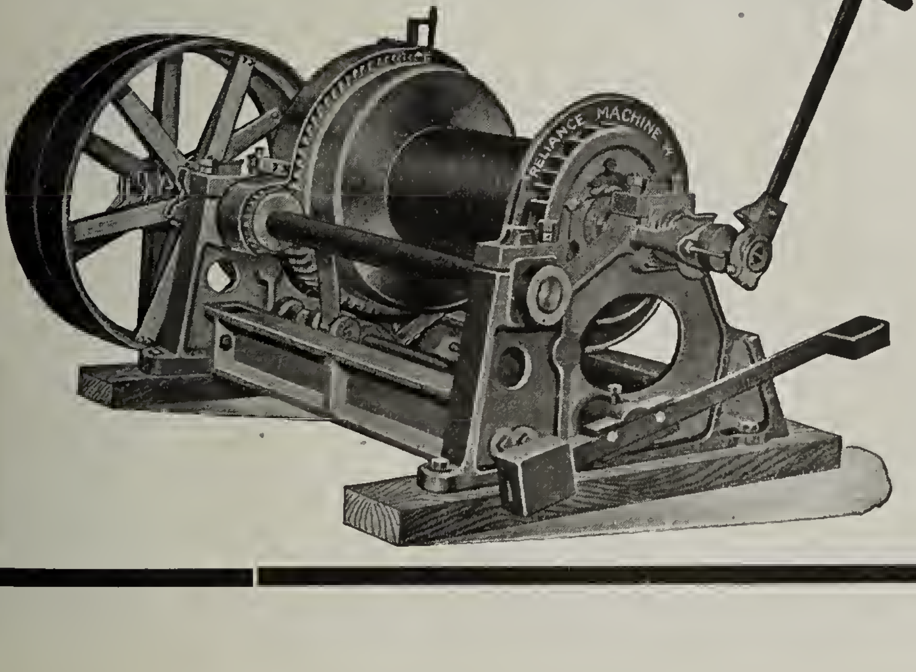

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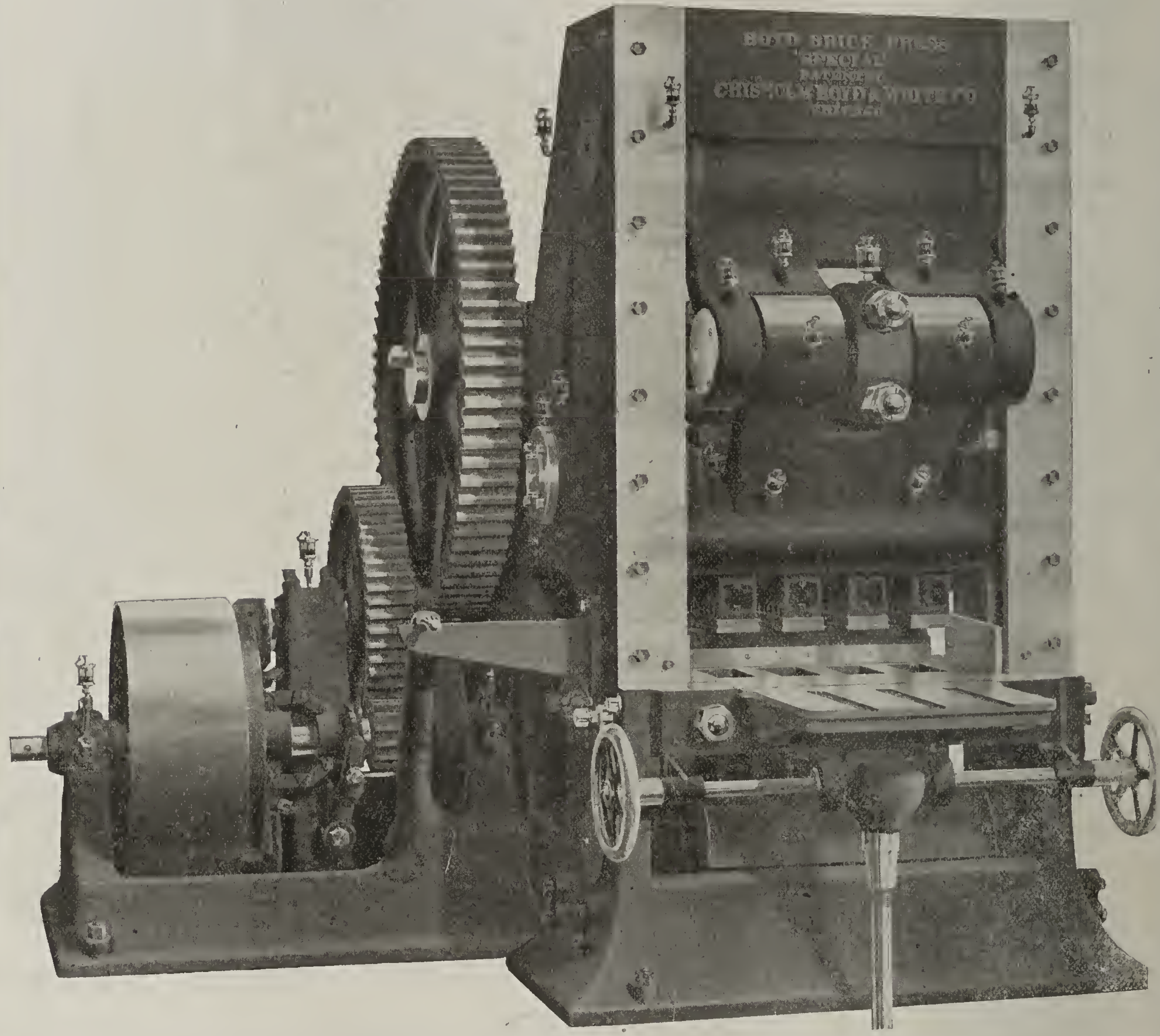

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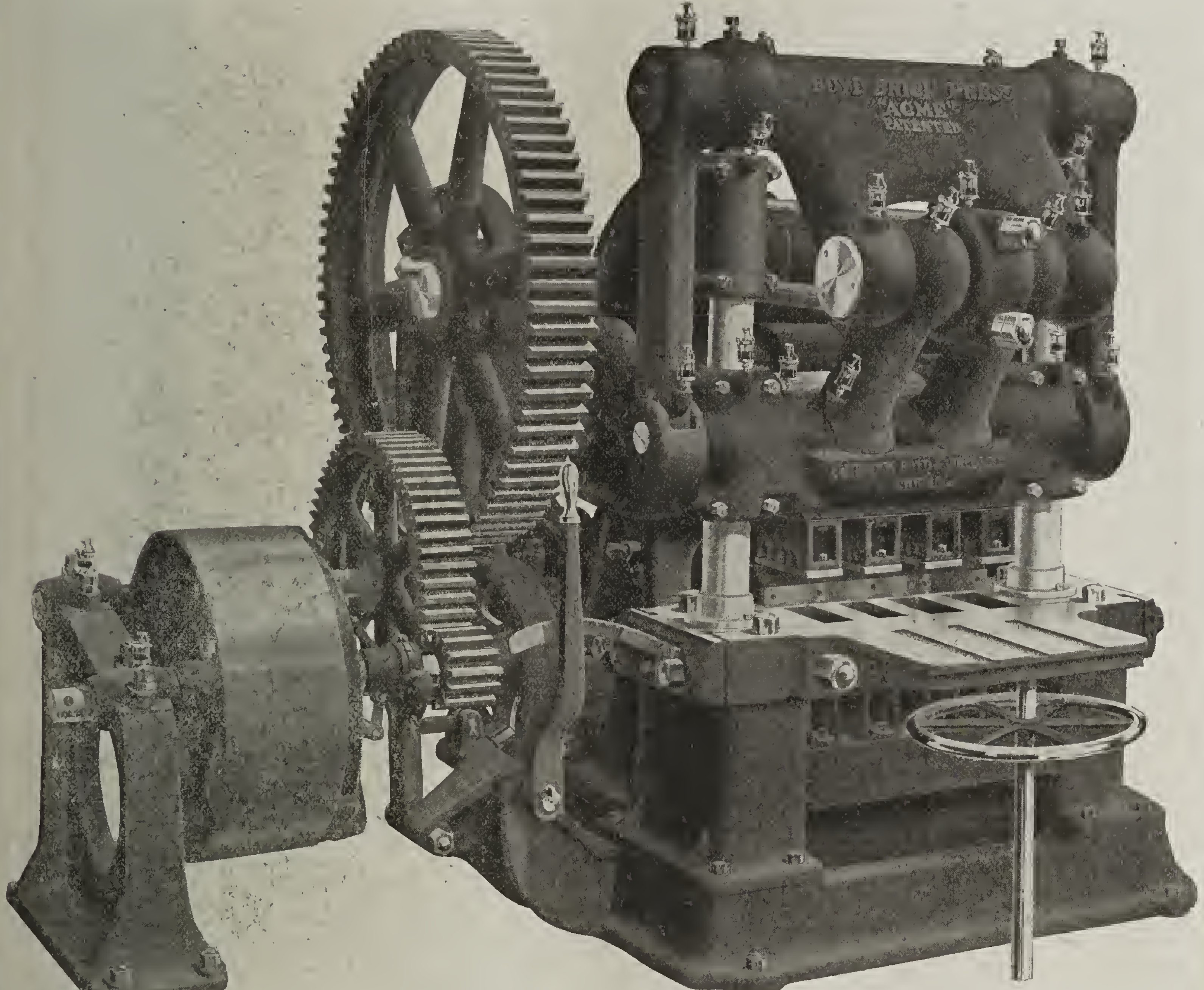

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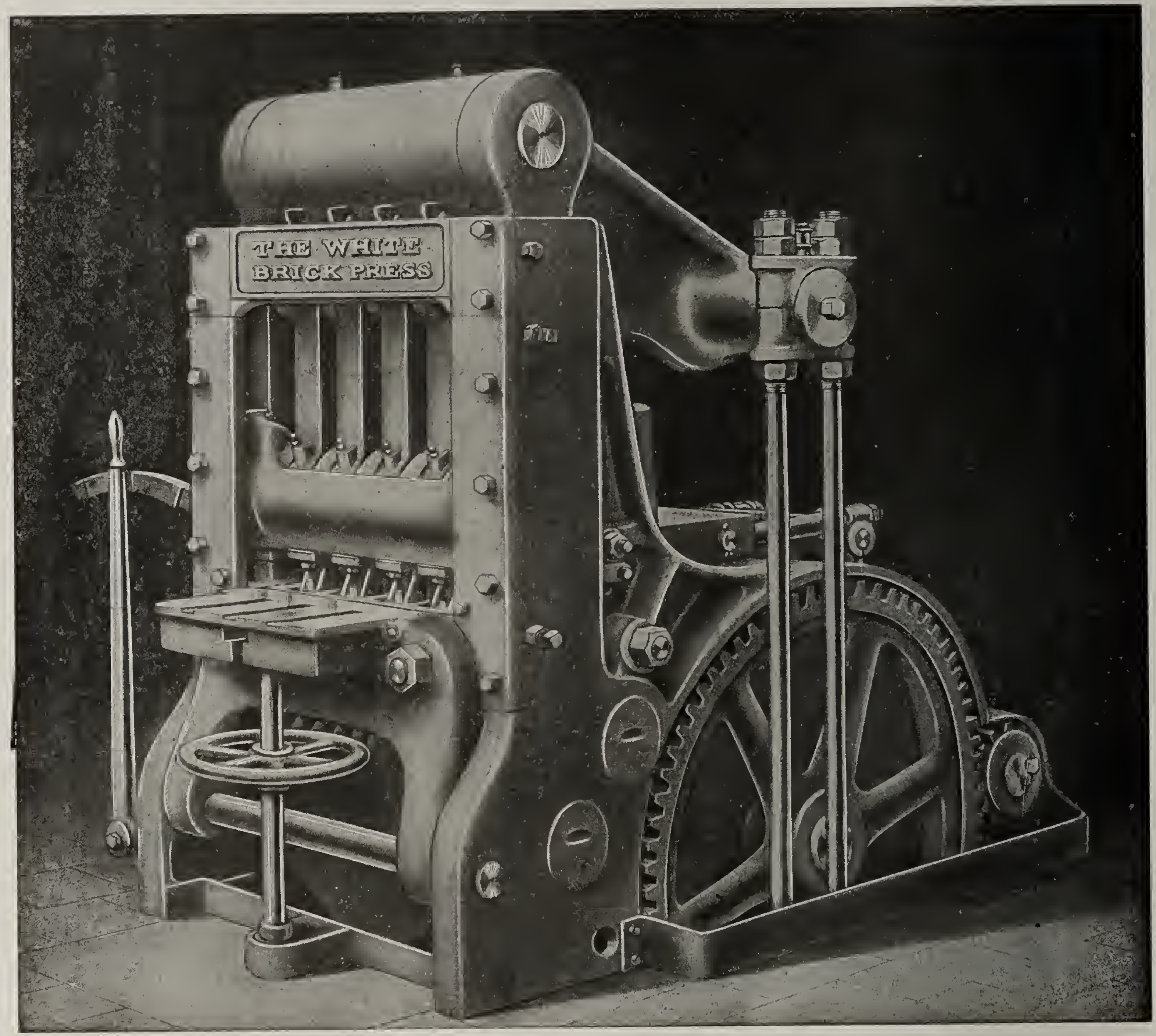

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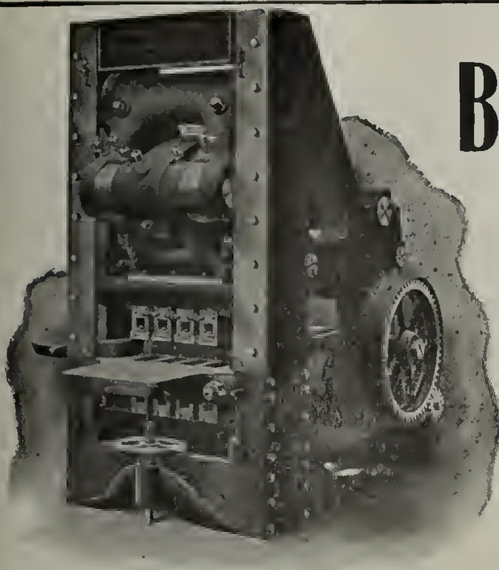

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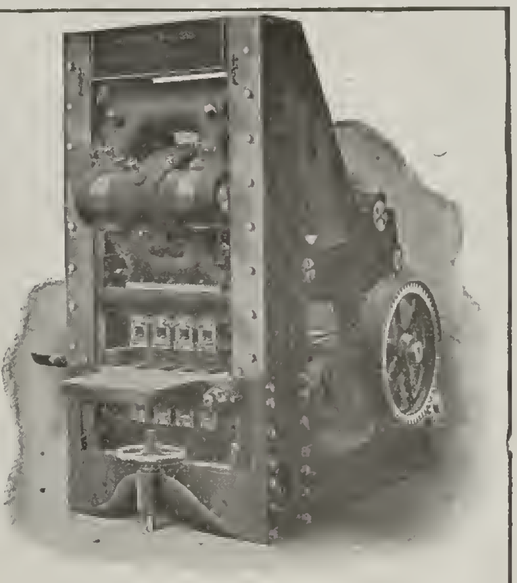

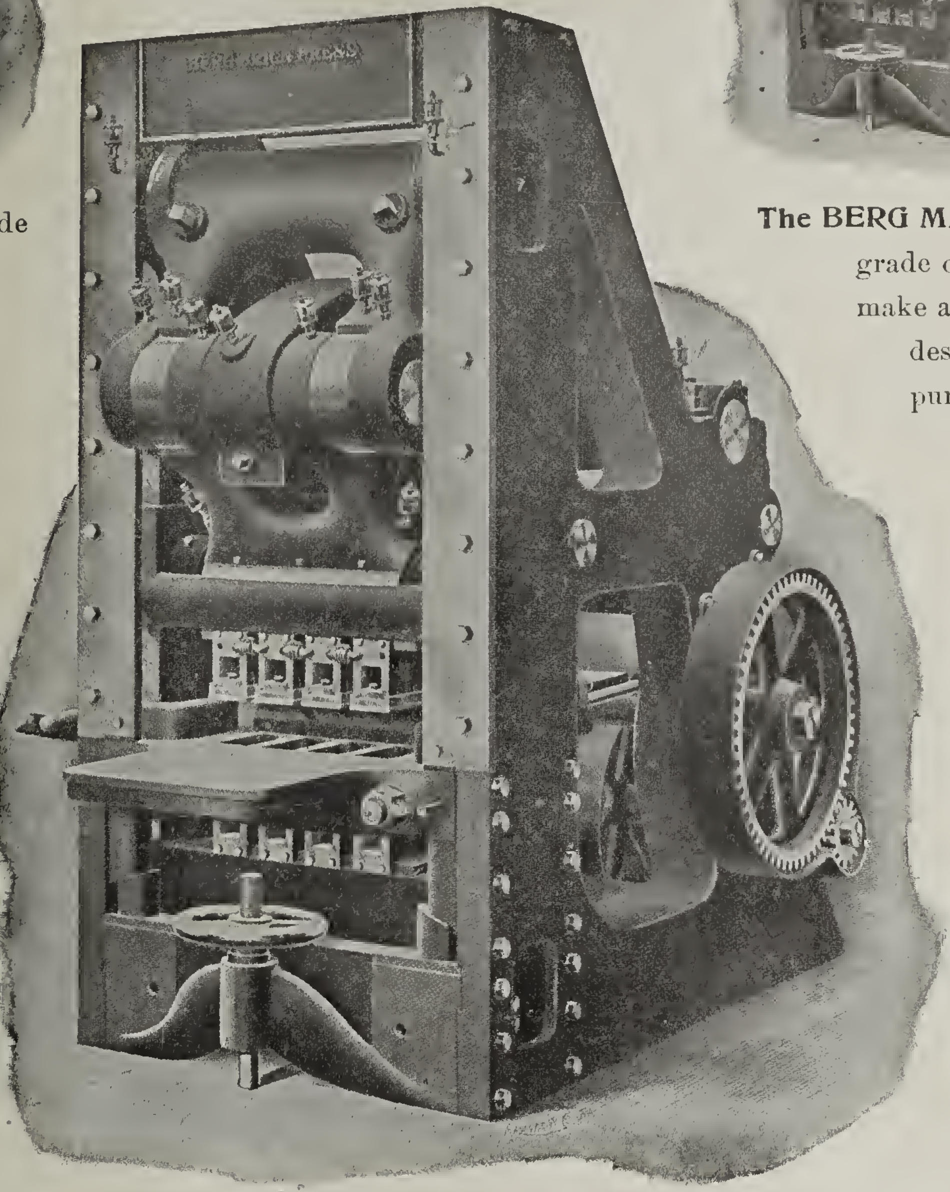

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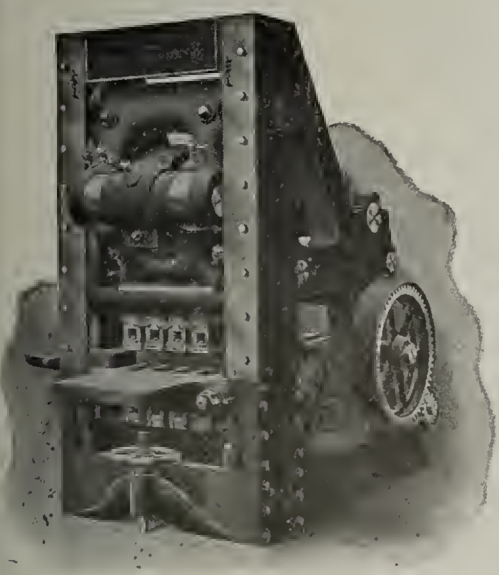

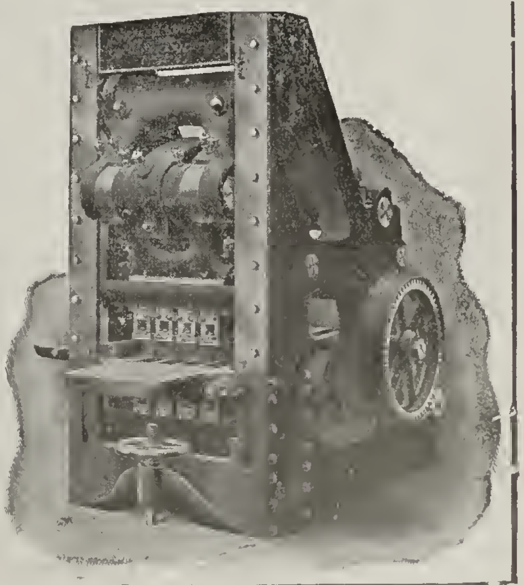

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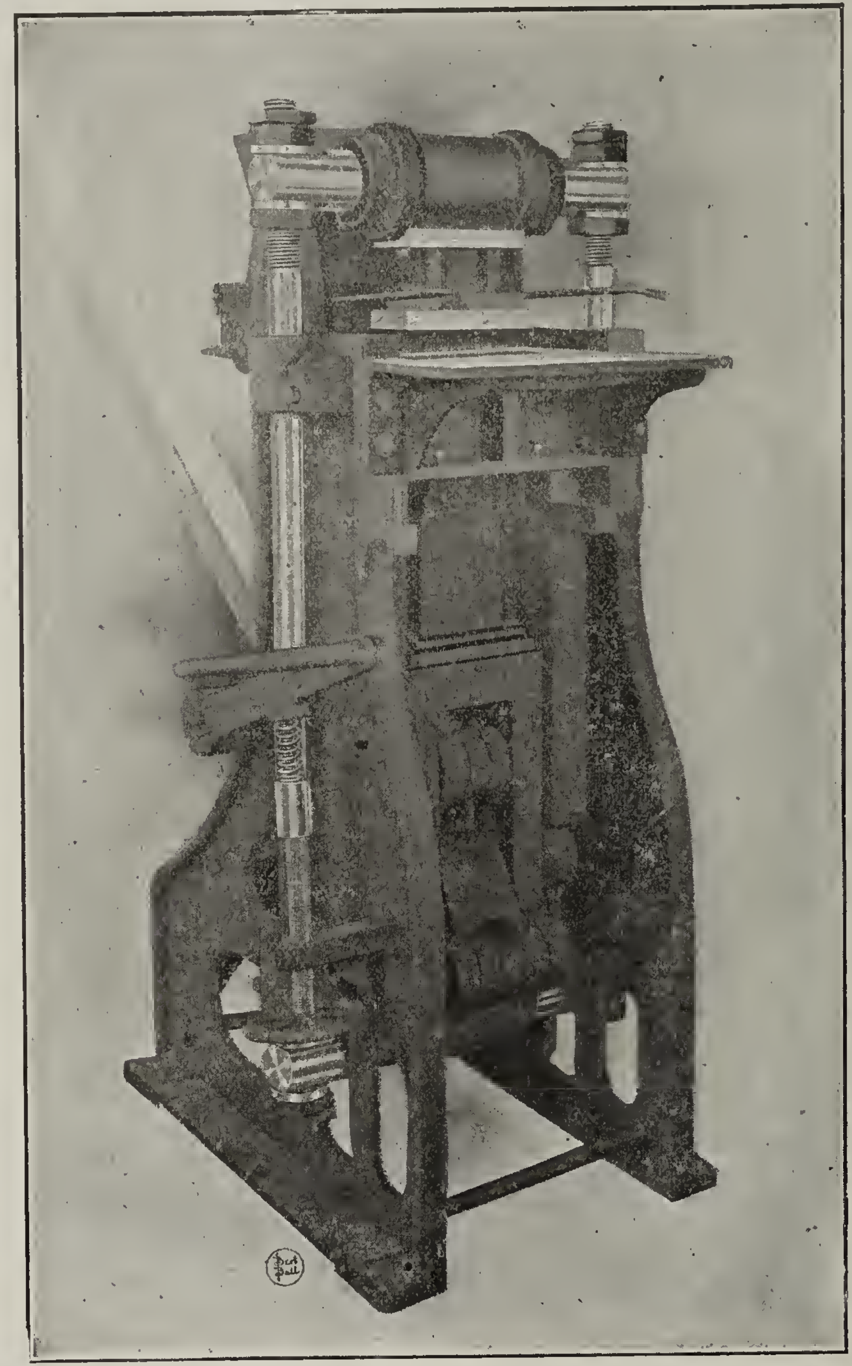

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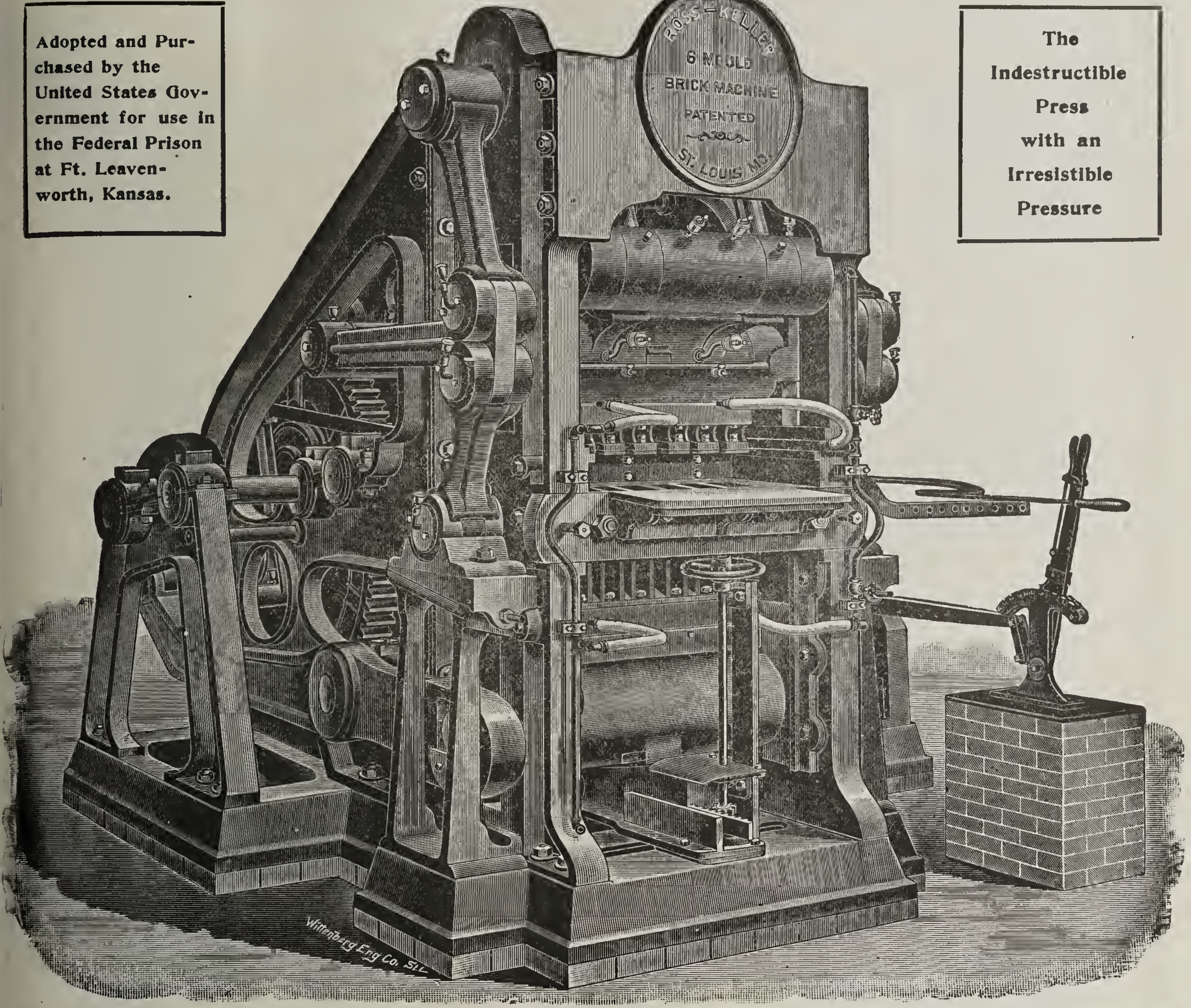

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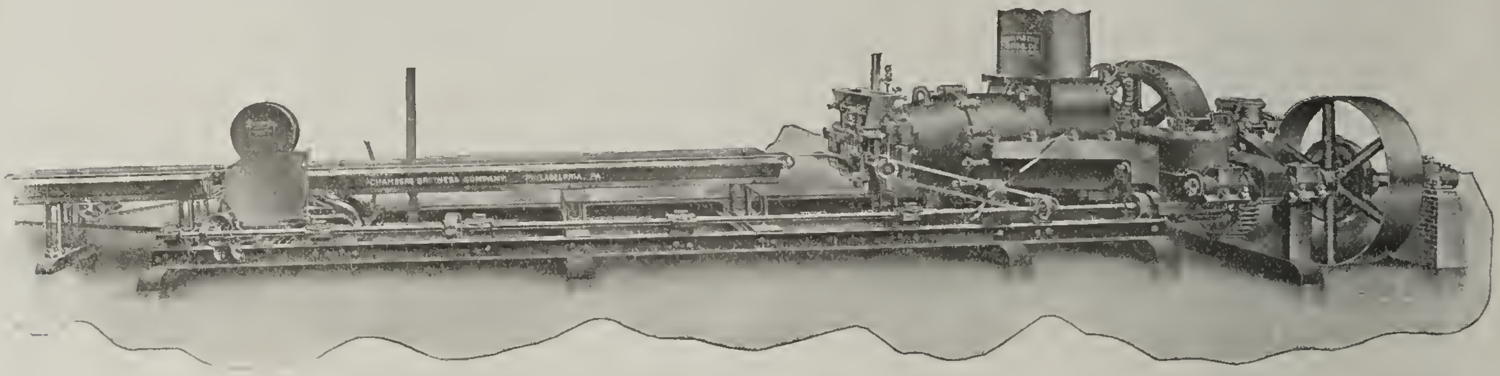

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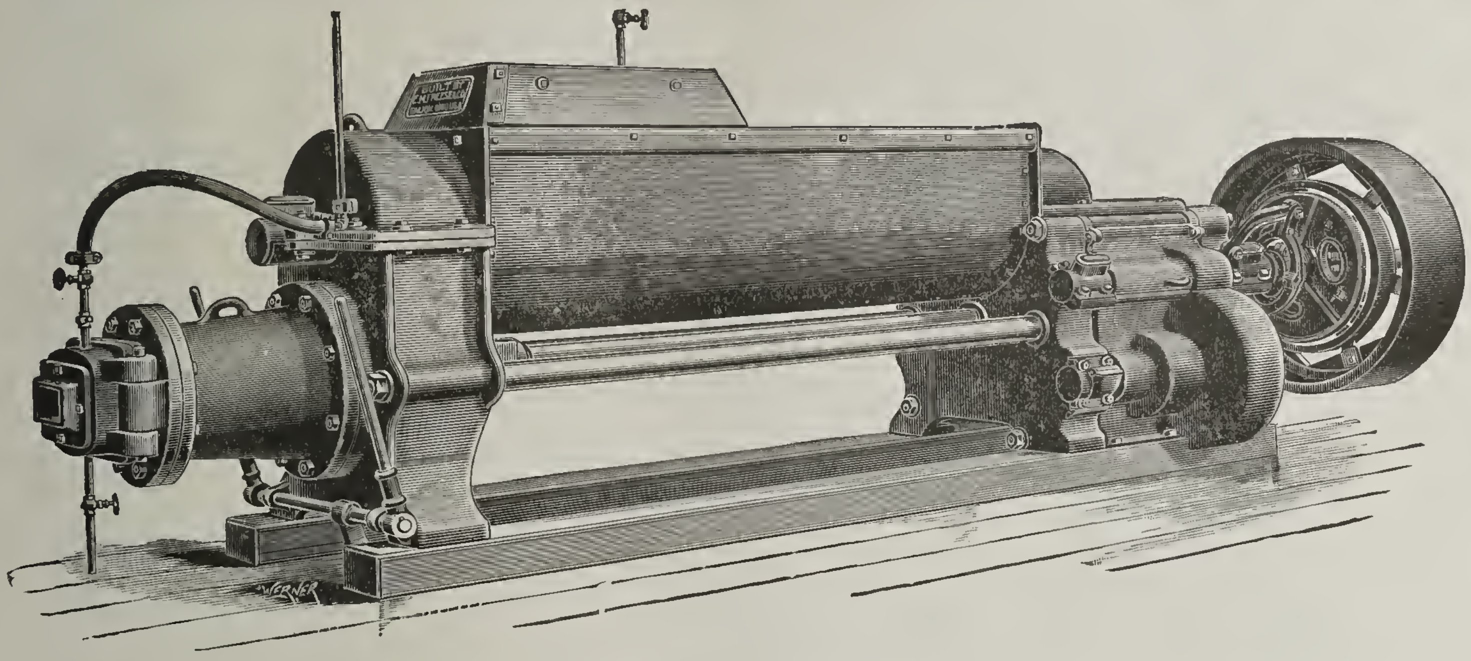

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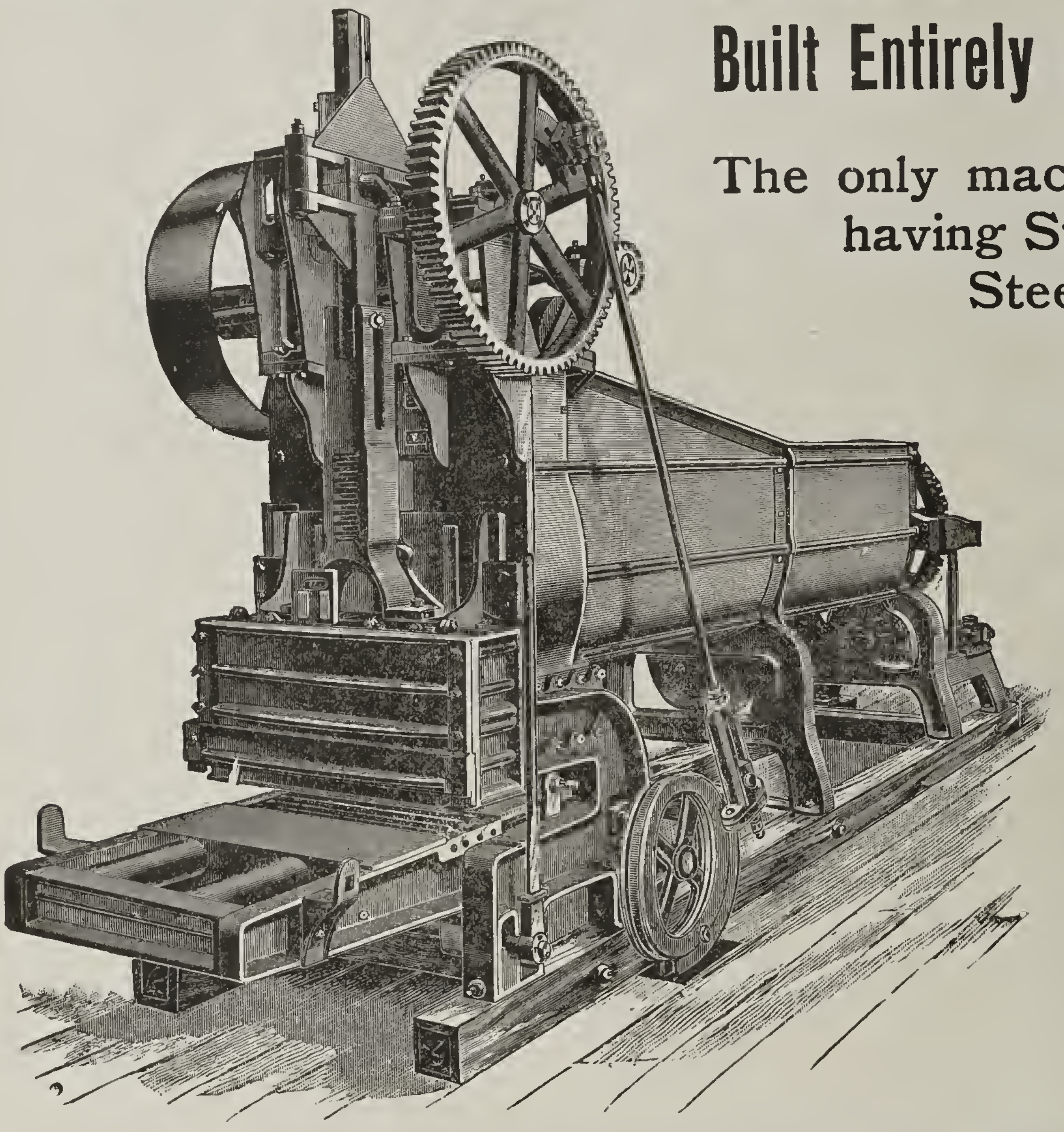

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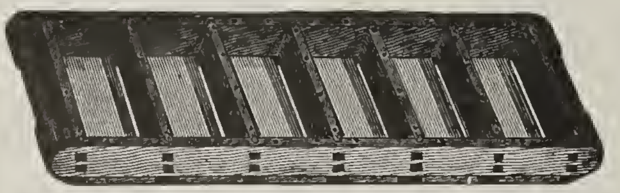

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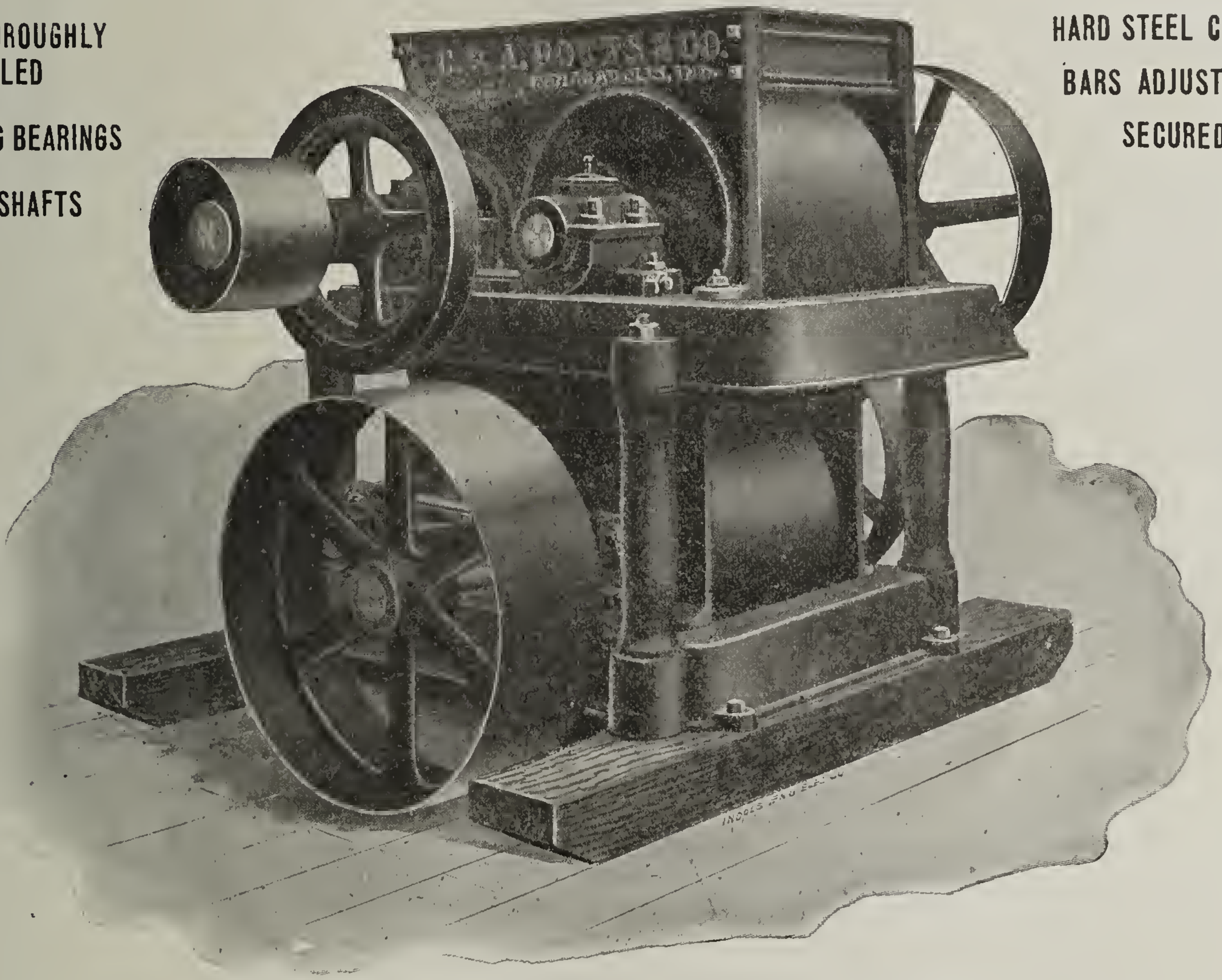

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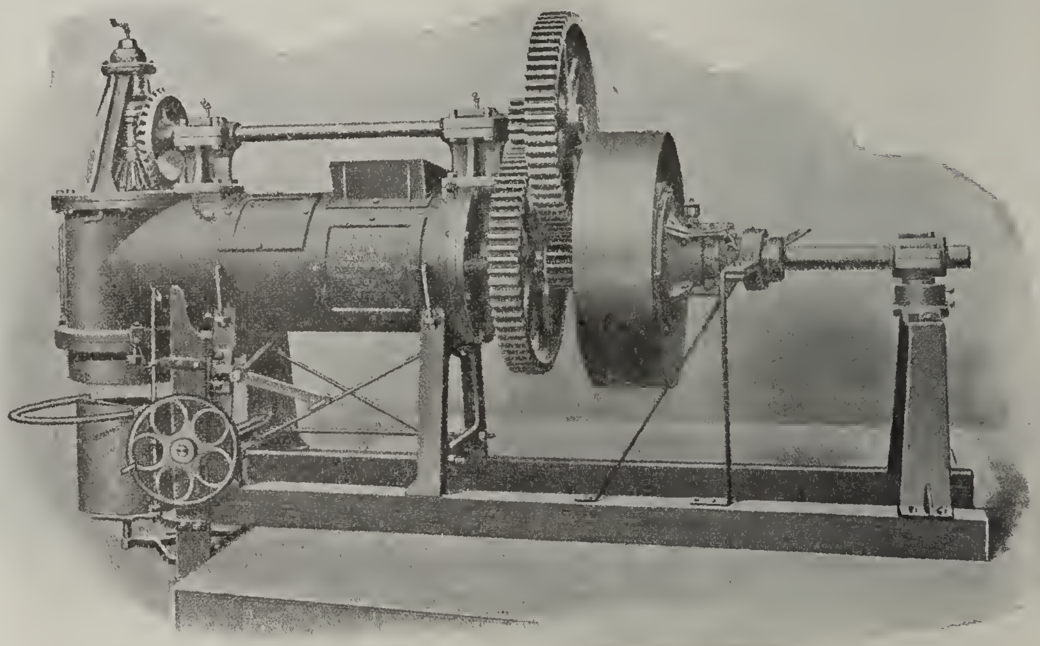

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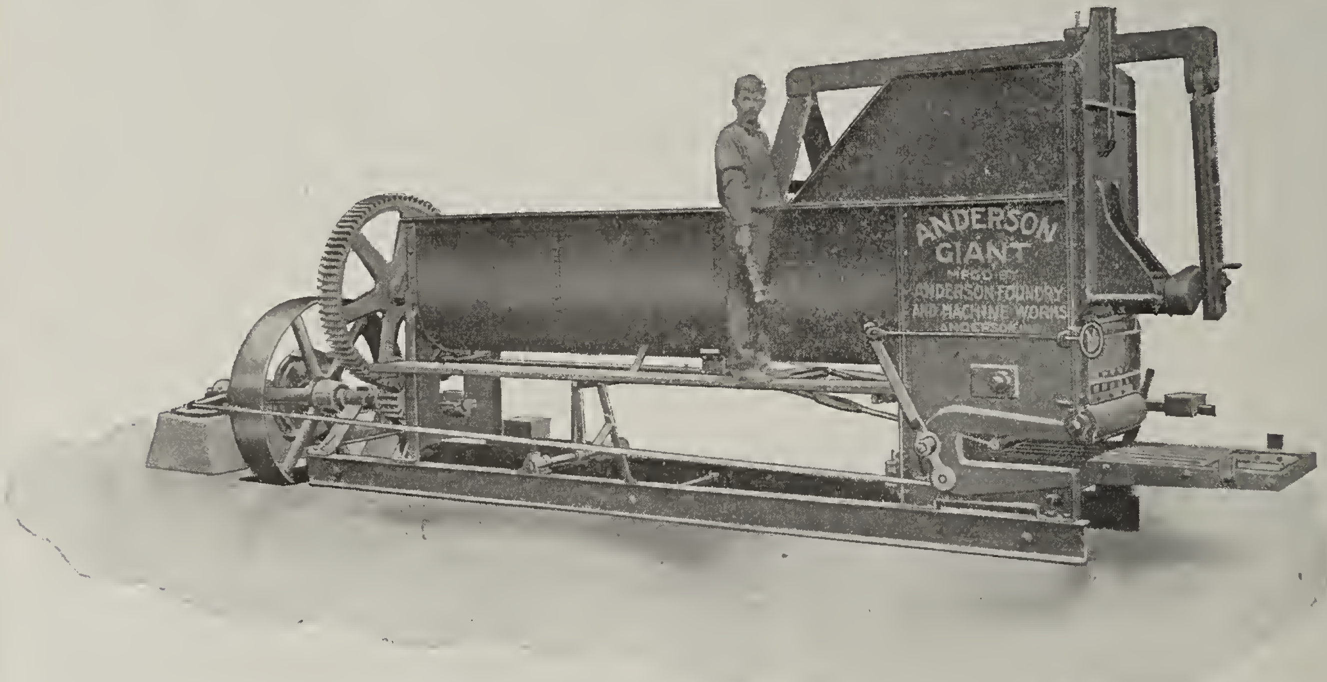

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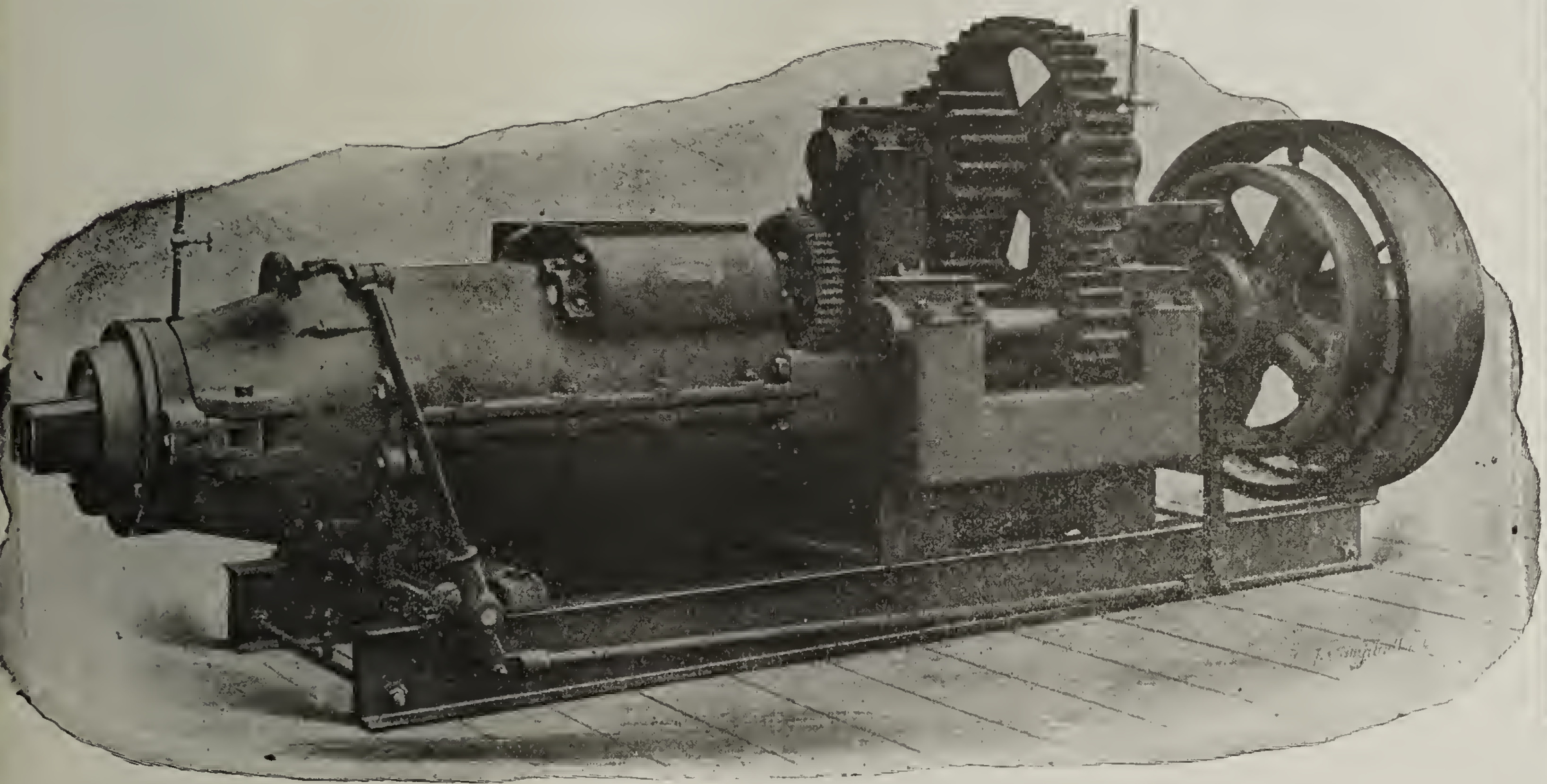

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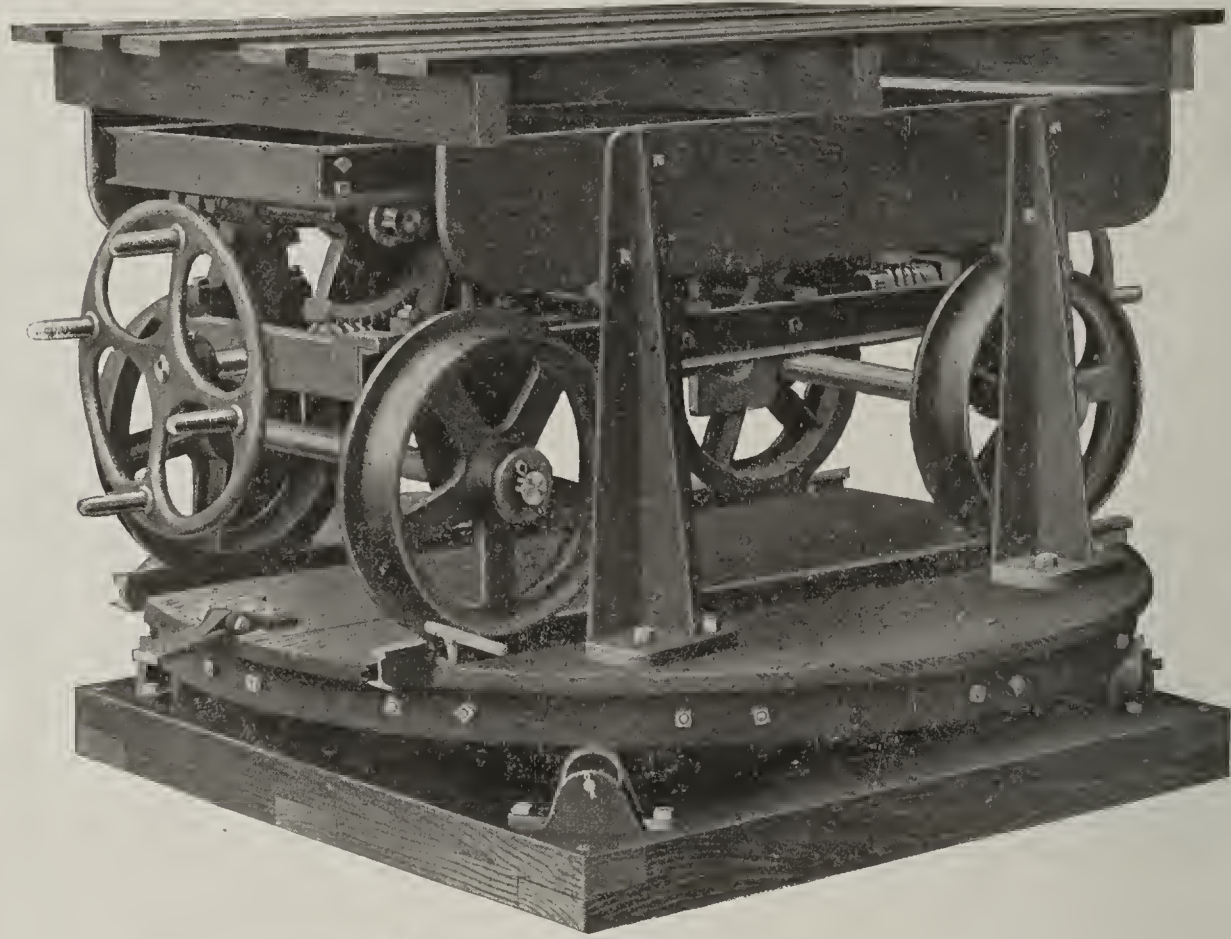

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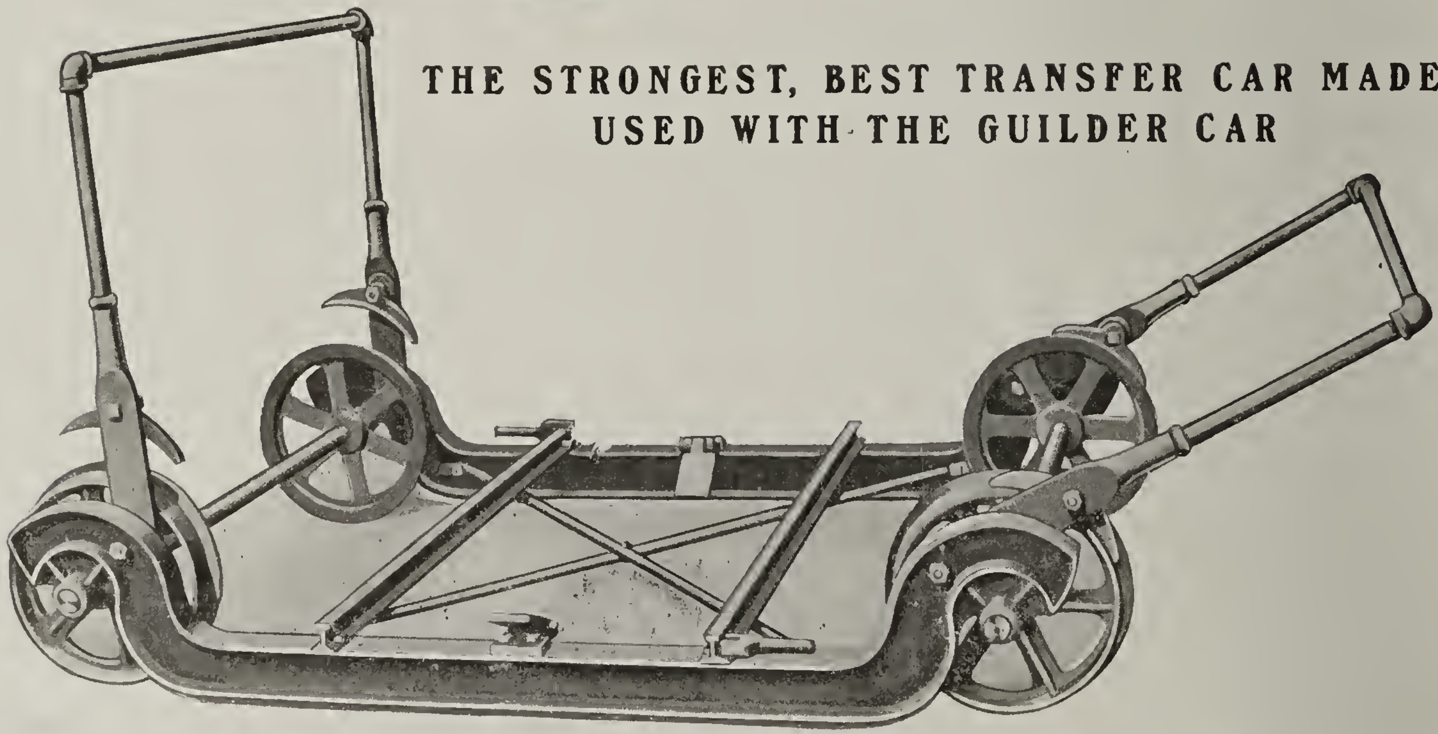

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ELECTROLYSIS OF REINFORCED CONCRETE*

BY A. S. LANGSDORF

The possible corrosion of the steel reinforcement of concrete structures is a matter that must appeal strongly to engineers in view of the constantly increasing use of this kind of construction. The subject in general has received considerable attention, but mainly along the lines of the effect of atmospheric action. Some experiments have been made to determine the electrolytic behavior of reinforced concrete, but thus far not on an extensive scale. Probably the most notable published work in this direction is that of Mr. A. A. Knudson, of New York, whose results are to found in the Proceedings of the American Institute of Electrical Engineers of February, 1907; this appears to be the first account of an experimental investigation of the subject.

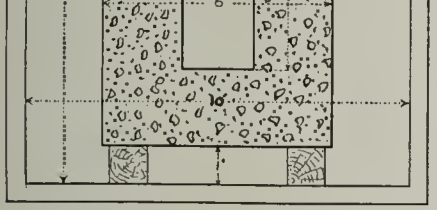


Fig. 1. Construction of Specimens

The experiments here described were carried out, under the direction of the writer, during the winter and spring of 1908, by Mr. M. M. Glauber, at that time a senior student of electrical engineering in Washington University. The work was undertaken as a graduation thesis and was very carefully done; its general plan was an amplification of that adopted by Mr. Knudson.

The tests made by Mr. Knudson were two in number. In the first test, three specimens (Nos. 1, 2 and 3, respectively) were made by embedding 2-in. pipe to a depth of 8 in. in a mixture of equal parts of cement and sand; the kind of cement is not stated, but from the context it appears to have been a Portland cement. The mold was an ordinary metal pail, so that there was a thickness of between 3 and 4 in. of concrete all around the pipe. The bottom of the pipe was closed by a water-tight plug. The specimens were then placed in water, No. 2 in fresh water and Nos. 1 and 3 in sea water. Specimens 2 and 3 were then connected in series and a steady current of 0.1 ampere was passed through them from a storage battery, the current entering through the pipe and leaving through the concrete. Specimen No. 1 had no current thrrough it, in order to compare its condition with that of the others at the end of the test. The test was continued for a little over thirty days, current being on

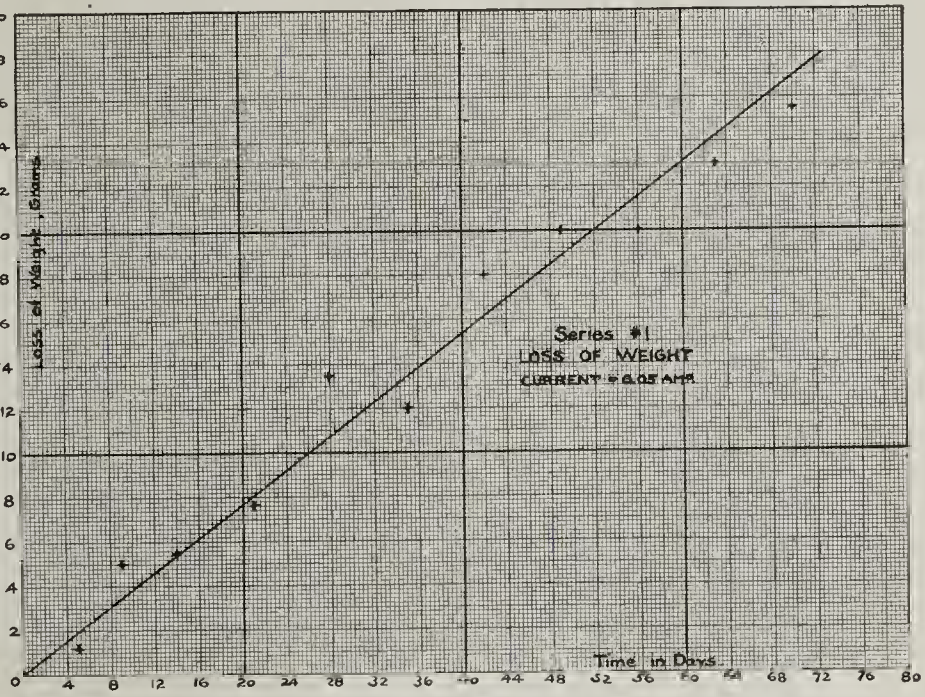


Fig. 2

---

* Read before the Engineers' Club of St. Louis, October 7, 1908, and printed in the Journal of the Association of Engineering Societies.

continuously. The results showed an unexpected deterioration of the concrete, large cracks appearing in it. There were also strong evidences of electrolytic action on the pipes, a layer of rust having formed upon them which extended into the concrete, especially on the walls of the cracks; pitting of the pipes was very noticeable, and there was an appreciable loss of weight.

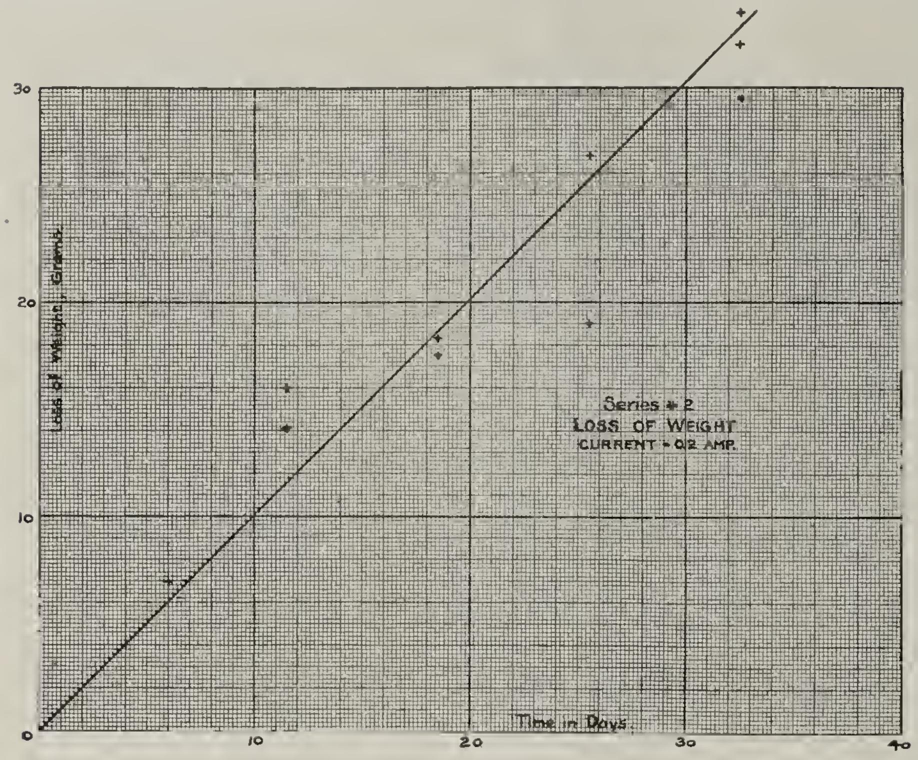


Fig. 3

In the second set of tests two blocks (Nos. 4 and 5) were made, similar to the other three except that Rosendale cement was used. The test run was again continued for thirty days with the current constant at 0.1 ampere. The results were similar to those of the first test, except that No. 4 (in sea water) showed greater electrolytic action, a hole 1 in. by 3/8 in. having been eaten clear through the pipe. In the first test, Specimen No. 1, in sea water, but without current, was absolutely unaffected. A sledge hammer and chisel were required to break it open, and the pipe was clean and bright. In all the other specimens the concrete became soft and crumbly, so that in places a penknife could be easily thrust into it.

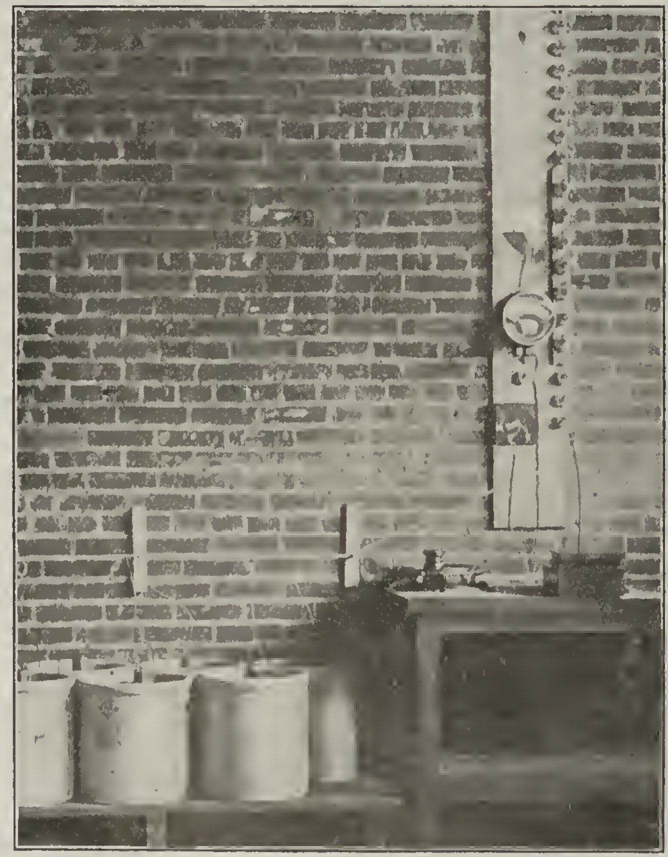


Fig 4. Arrangement of Apparatus

The tests made at Washington University were also divided into two parts, but twelve specimens were used in each part. All of the specimens consisted of 1½-in. pipe embedded to a depth of 9⅛ in. in a 1:3:5 concrete, made rather wet and thoroughly tamped. The cement was Red Ring brand (made by the St. Louis Portland Cement Company) and the aggregate was crushed limestone. The thickness of concrete all around the pipe was 2 in. The specimens, after aging for about fifty days, were placed in 6-gal. glazed earthenware jars, raised above the bottom by wooden blocks, and were immersed in fresh water to within about 1 in. of the top of the concrete; fresh water was added as necessary to replace loss through evaporation. Fig. 1 shows the details of the specimens.

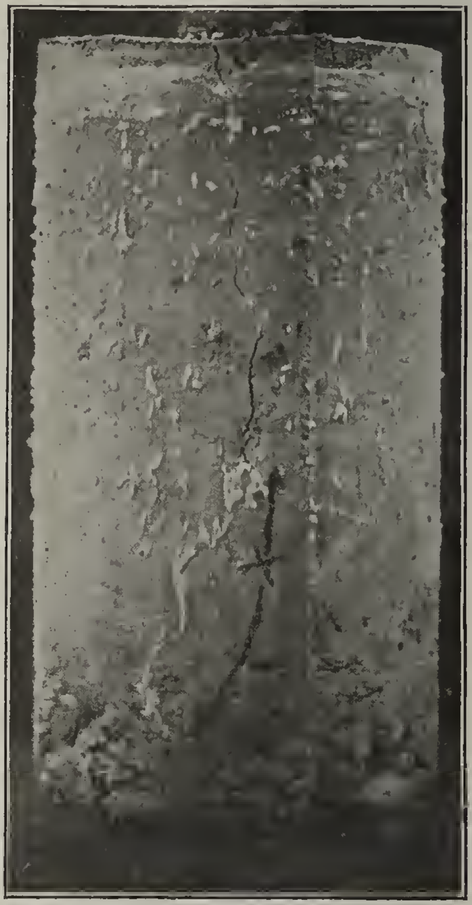


Fig. 5. Showing Radial Crack, Partly Covered by White Deposit. First Series

In the first run, eleven of the specimens were then connected in series and a current of 0.05 amperes was passed through them, the twelfth specimen being without current. The run was continued for seventy days continuously. (It will be noted that in this test the current was only half that used by Mr. Knudson, and the run was more than twice as long.) All of the pipes were weighed before embedding them in the concrete. At the end of each week one specimen was removed, broken open, and the pipe cleaned and reweighed, with the results shown in Fig. 2.

In the second run, which continued for thirty-three days, the specimens were connected as before, but the current strength was raised to 0.2 ampere. The curve showing loss of weight in this case is shown in Fig. 3; during both runs, readings of the drop of voltage around the specimens were taken at regular intervals. The apparent resistance per specimen, calculated by dividing the volts per sample by the current, varied in the first run from 660 ohms at the start to about 1,200 ohms at the end; in the second test it changed from about 50 ohms at the start to about 500 ohms at the end. Mr. Knudson found an apparent maximum resistance of from 300 to 400 ohms per specimen, but differences in this respect are to be expected because of variations in the density, or porosity, of the samples. It is to be understood that these resistances are apparent only, for they include the effect of a very considerable polarization.

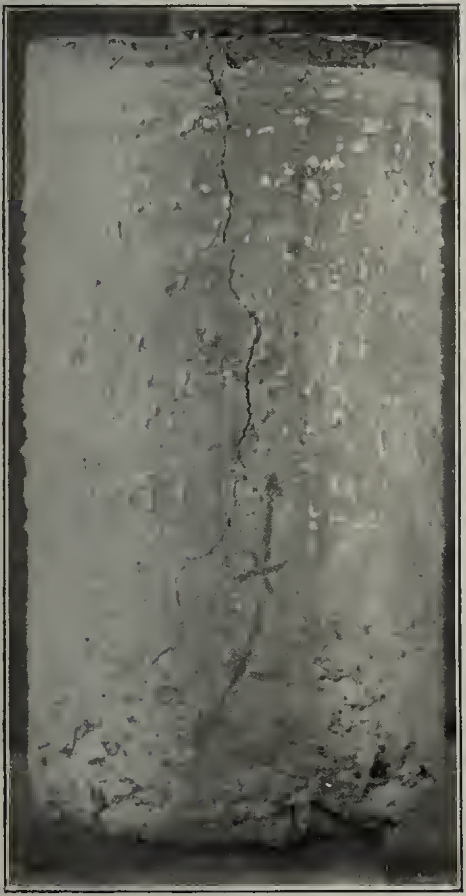


Fig. 6. Showing Radial Crack, Deposit Removed

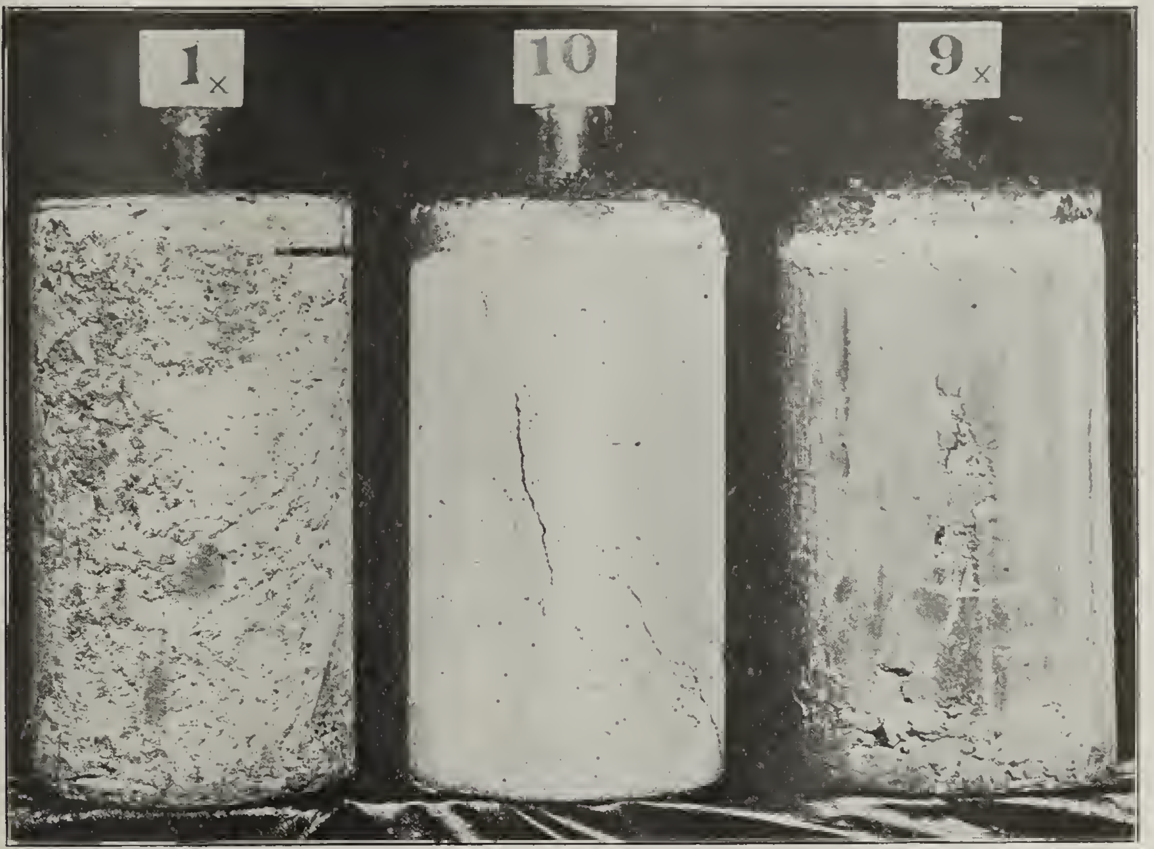


Fig. 8. Radial Cracks, Second Series. Specimen ix had no Current through it

Fig. 4, 5, 6, 7, 8, 9, 10, 11, are reproduced from photographs of the specimens after their removal from the circuit, and are self-explanatory. They show very clearly the large radial cracks that formed in the concrete; and some show also the flaky white deposit that formed on the outside surface. Lack of time prevented making an analysis of this deposit, but this will be done in a further series of tests.

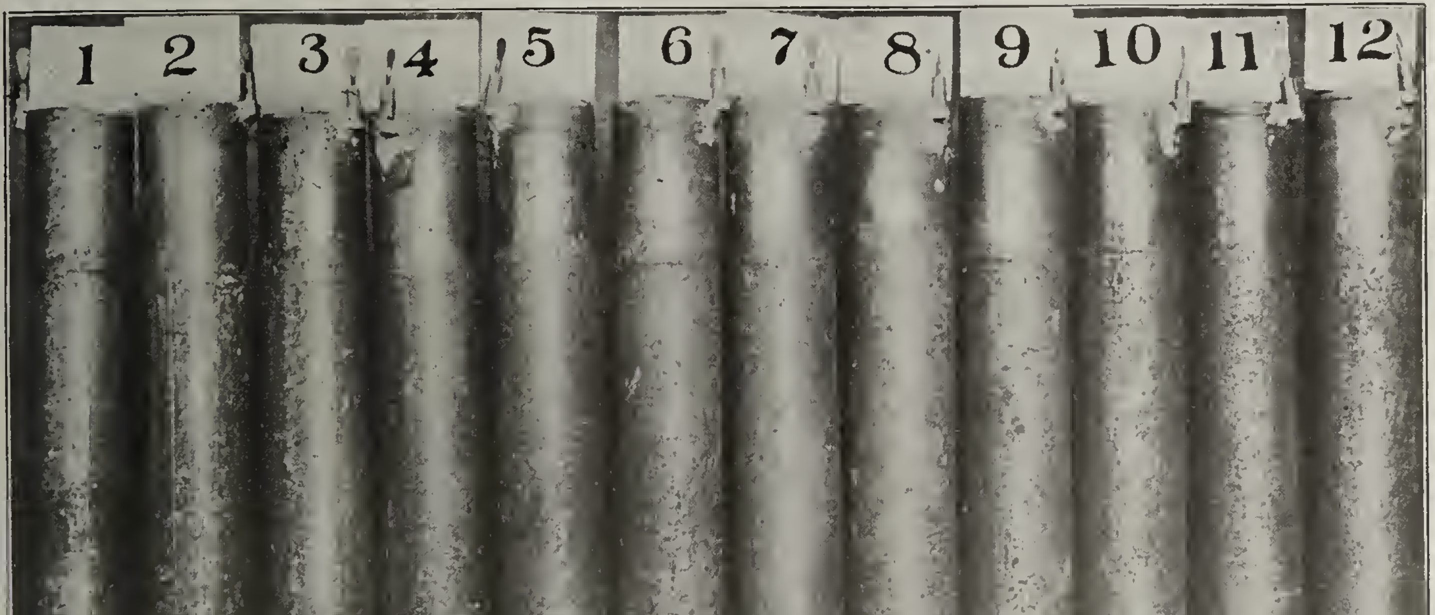


Fig 7. Showing Progressive Pitting of Pipes. First Series

The softening of the concrete observed by Mr. Knudson was confirmed in these tests, but it was not so marked as reported by him, probably on account of the different mixture used. But the electrolytic action on the embedded metal was very strong, as shown by the photographs and by the curve of loss of weight. Whereas the specimens not subjected to the current remained clean and bright, the others developed a coating of rust whose thickness increased with the duration of current flow, and in all cases where cracks developed a coating of rust was deposited on the walls of the cracks.

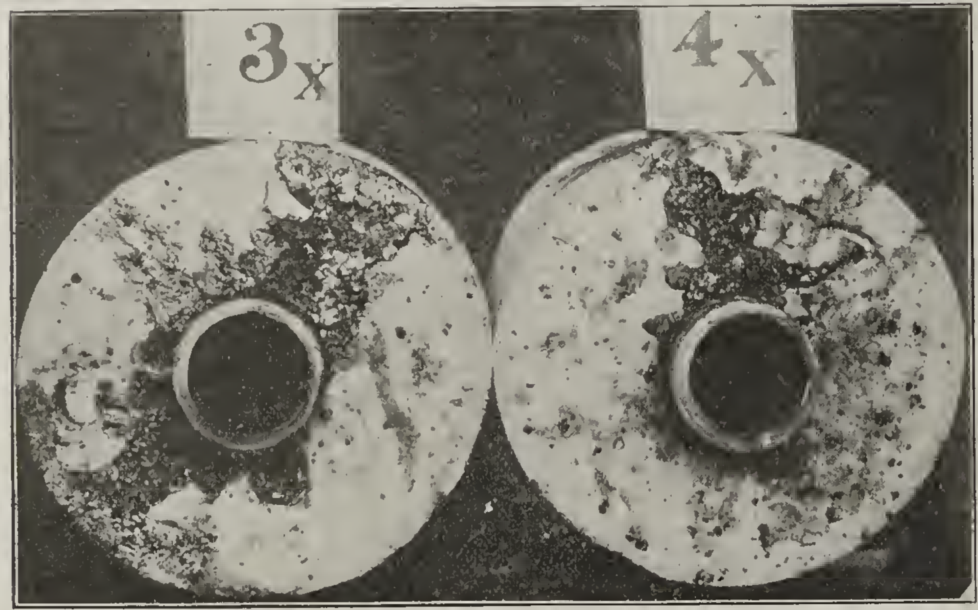


Fig. 9. Rusty Deposit around Pipe. Second Series

The cracking of the concrete may possibly be explained by the fact that the layer of rust is of rather loose consistency, so that its density is less and its volume greater than that of the original material, thus giving rise to a bursting force. The fact that the cracks are mainly radial seems to support this hypothesis.

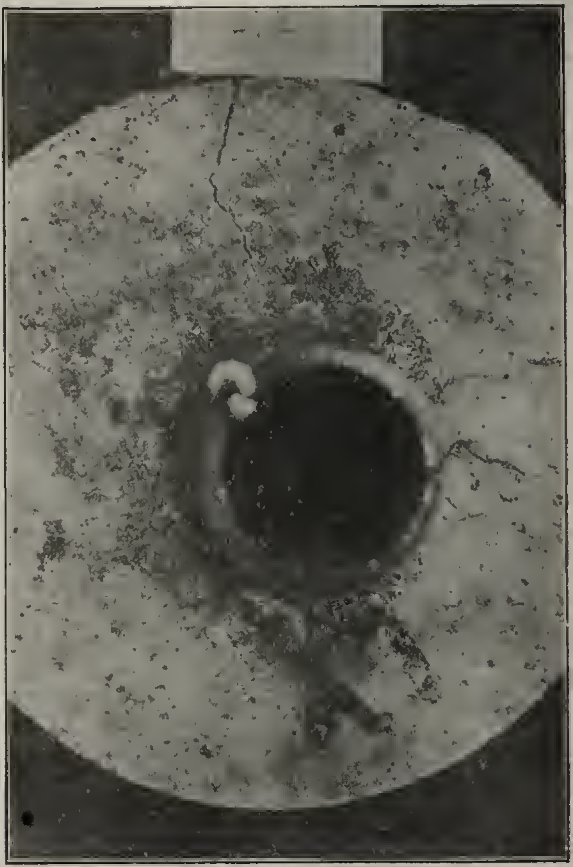


Fig. 10. Top View of Radial Crack. Second Series

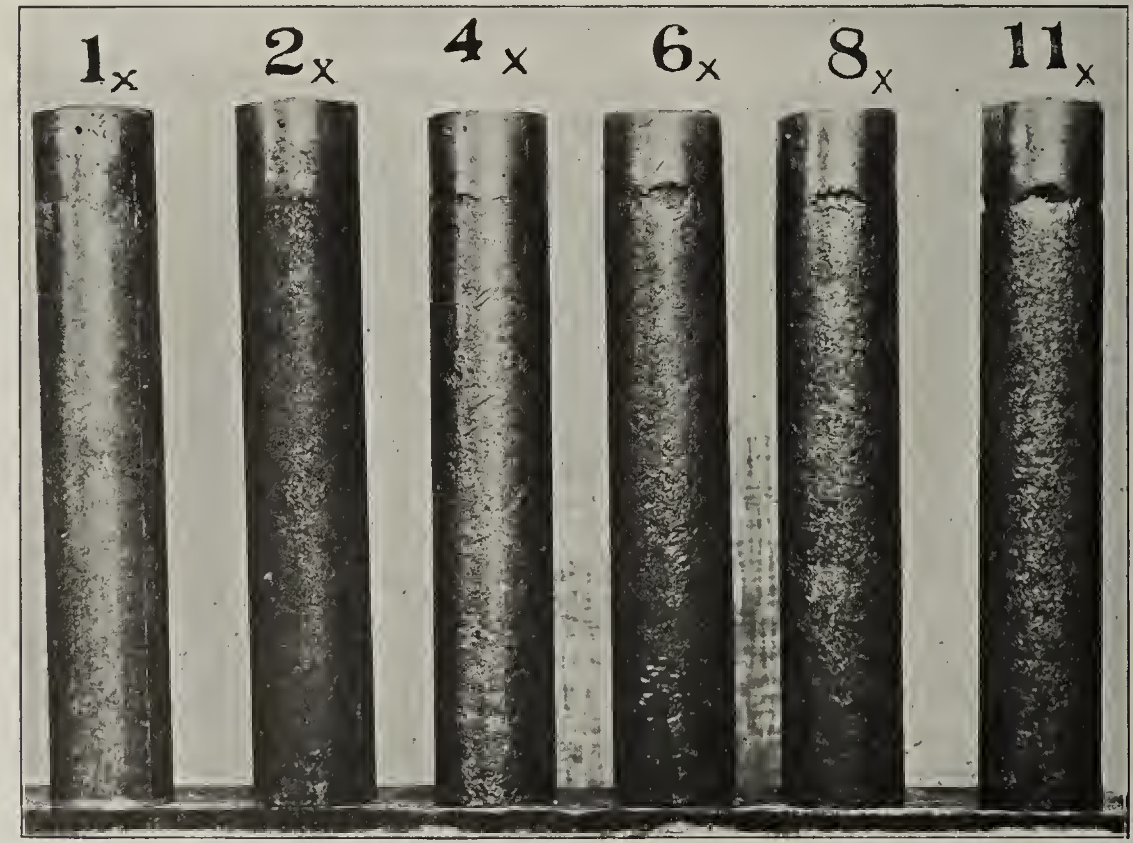


Fig. 11. Pitting of Pipes. Second Series

Mr. Knudson's results, as well as those here described, indicate quite clearly that great caution must be used in the construction of reinforced concrete structure where the conditions are similar to those of the tests; such, for example, as might be found in the case of bridge abutments or concrete sewers in the neighborhood of grounded railway circuits. Further information is needed as to the extent to which the reinforcement of such structures, when buried in damp or wet earth, may become part of the return circuit of trolley lines; and also to determine the insulating effect of waterproofing ingredients in the concrete. It is the intention of the writer to take up these subjects in a further investigation, and it is to be hoped that others will also undertake the study of this important subject.

BAKING ENAMELS FOR BRICK AND CONCRETE

Frequently attempts have been made to replace the dull surface of concrete blocks and concrete brick by something more pleasing to the eye; however, with little success until recently. That it is so difficult to apply materials of a high luster to concrete is due to the fact that concrete can not be heated to the same high temperature as clay brick, which latter can be coated with glass enamels or porcelain enamels while exposed to red heat. For concrete, therefore, enamels have to be composed of materials which do not require high temperatures.

Such enamels are put on the market by Mr. Paul Fuchs, 611 Carmen ave., Chicago, who is a specialist in this line. He invented a process by which concrete brick as well as clay brick and metal-ware can be enameled without calcining them. The object to be enameled is merely heated in an oven to a temperature of about 200 Fahrenheit, or in other words, the enamel is baked on instead of being vitrified or fused.

The results obtained by Mr. Fuchs' process are very similar to porcelain-enameled clay brick which latter sell for from $80.00 to $120.00 a thousand and cost about $60.00 to manufacture on account of the high percentage of refuse. Concrete brick coated with this special enamel, on the other hand, cost about $16.00 a thousand to manufacture, brick, enamel, labor of enameling and heating all included. They can easily be sold for $30.00 and upward, and for this reason are strong competitors of porcelain-enameled clay brick or tile.

Another great advantage of Fuchs' enamels in connection with concrete brick, clay brick or sand-lime brick, is to be found in the fact that the enamel can be renewed after the brick is laid in the wall, if, by some accident, the brick should be defaced, which of course, can not be done in the case of porcelain-enameled brick. The enamel has merely to be applied like paint and to be given time to harden. Hence baking of the enamel is not absolutely necessary, although preferable in all cases in which maximum resistance is required and whenever small objects are to be enameled which can be handled conveniently. In the case of plastered or cement-coated inside walls, baking in the ordinary way is out of the question. However, the baking process can successfully be replaced by heating the room to a high summer temperature for a day and then allowing to cool gradually before applying the next coat.

One of the main characteristics of Fuchs' enamels which distinguish them from similar products on the market is their remarkable elasticity which enables them to withstand more rough handling than any porcelain-enameled tile or brick will do. These elastic qualities are demonstrated, to the great surprise of the person not familiar with the properties of these enamels, by repeatedly striking the enameled face of the brick with a hammer. A severe blow with the hammer will merely leave an imprint, but will not break the enamel. Only after the brick is fissured by repeated blows does the enamel show cracks where the brick burst. The enamel retains this elasticity even after years, when age has hardened it to such a degree that a chisel is required to remove the enamel from the brick.

Acids or alkalies will not affect the enamels in the least. Therefore, they may be washed with soap and hot water or with diluted acids as often as desired. If the enamels are properly applied, they withstand all atmospheric changes, as tests prove which have been carried on for a number of years under conditions far more severe than those existing in a building, namely by repeated freezing and thawing of the brick in short intervals. All that is required to prolong the life of the enamel is to apply it to a well-made brick, that is to say to a brick of a certain density, which does not absorb too much water through the mortar joints. A poorly made concrete brick, of course, which absorbs water in such quantities that, upon freezing, the brick itself is fissured, will likewise show a fissured enameled surface. Yet, in the case of a well-made and thoroughly seasoned cement brick there is absolutely no danger of the enamel showing cracks in time, a feature so common to the expensive porcelain-enamel used so far.

In addition to the formerly mentioned properties of Fuchs' enamels, builders are pleased to find for the first time among these enamels of various colors, a white enamel which stays white unless overheated in the baking process, and which does not change its color under the action of the sun rays, which many kinds of porcelain enamels or glass enamels do, and which, last, not least, is not stained at all by dirty rain water percolating through the mortar joints into the brick.

The ink test, the severest test to which architects subject their samples of enameled brick, in order to study the action of rain water upon the enameled surface, is passed only by Fuchs' white enamel. All porcelain-enameled brick or tile of any description absorb the ink, which represents the rain water laden with dust or soot, through the pores of the burnt clay and turn the formerly white enamel black, while in the case of Fuchs' enamel, the clay brick, cement brick or sand-lime brick likewise absorbs the ink, however, without darkening the enamel which remains white and non-transparent.

Paul Fuchs, Chicago, U. S A.

On account of these excellent qualities exhibited by Fuchs' enamels, architects begin to make more frequent use of enameled brick, a building material which economic reasons often prevented them to use. Now that the price of the enameled brick is only one-third or one-quarter of what it used to be, the use of it will become more wide-spread, so much the more as this enamel combines with the good features of the best porcelain enamel certain valuable properties not to be found in the latter.

The enamel is applied with a brush in a thin coat and then exposed for 5 hours to a temperature of 160 Fahrenheit in the case of the white enamel, and heated for 5 hours to 200 Fahrenheit in the case of all colored enamels. It is very important to closely observe these temperatures and not to overheat the enamels. Heating and cooling have to be done gradually and the baking oven must not be opened while the brick are heated. Concrete brick, which always contain a large amount of moisture, must be heated for a number of hours and afterwards be cooled again before the enamel is applied. Otherwise the moisture given off in the form of steam would affect the enamel and prevent it from properly hardening.

The baking oven is a large chamber, built of concrete or brick or galvanized iron which is heated by a number of gas burners or by steam pipes to the desired temperature. A galvanized iron baking oven large enough to hold 500 brick can be supplied for the sum of $100.00. Such an oven would merely require gas pipe or steam pipe connections. Ovens of larger proportions are preferably constructed of masonry. Detailed designs for them are furnished to customers upon signing a contract acquiring the exclusive rights for the use and sale of the enamels in a certain territory, and to any one placing an order for enamel large enough to warrant the use of these large baking ovens.

One gallon of the enamels is sufficient to coat one thousand brick of a smooth surface four times, if the enamel is applied in thin coats which should always be done. If the enameled brick are to be used for inside work, for instance for power stations, breweries, halls and so on, two thin coats are sufficient. For outside work four thin coats are required.

Concrete brick of a rough surface require more enamel than smooth clay brick or sand-lime brick, that is to say, the holes in the brick partly fill with the enamel, so that a gallon does not go as far as with smooth brick. Such concrete brick, however, can be smoothed by coating the surface of the previously thoroughly moistened brick with a thin mud of neat cement and water, which has to be kept moist for a few days in order to properly harden. On the other hand, many architects prefer such enameled rough brick showing deep holes to smoothly enameled brick.

If applied to plaster in one thin coat, one gallon covers 500 square feet. Applied to metal-ware for instance, bedsteads, about three coats are required.

The price of the white enamel is $3.50 per gallon in barrel lots, containing about 50 gallons, $3.75 per gallon in quantities of 50 gallons down to 20 gallons, if shipped in gallon cans and $4.00 per gallon, if less than 20 gallons are ordered.

The price of all colored enamels is $4.50 per gallon in barrel lots (50 gallons), $4.75 per gallon in quantities of 50 gallons down to 20 gallons, shipped in gallon cans, and $5.00, if less than 20 gallons are ordered.

From the foregoing prices of white and colored enamels, the cost of enameling a thousand brick can be figured as follows:

One gallon of white enamel, at $3.50 per gallon in barrel lots, is sufficient to coat 1,000 brick four times. The work required for this amounts to two days' labor, equal to $4.00, as one man at $2.00 a day is able to coat 2,000 brick once in one day, which is equal to coating 500 brick four times in one day or 1,000 brick four times in two days. Assuming the expense of gas or steam to be $0.50 per day for a baking oven of a capacity of 500 brick, the heating amounts to $1.00 per thousand brick, so that the total cost of enameling a thousand brick amounts to:

Enameling	$3.50
Labor	4.00
Heating	1.00
Total	$8.50

As the cost of the colored enamels is $1.00 more than that of the white enamel, the total cost of colored enamels is $9.50.

GROUP OF PANELS FOR A BOSTON OPERA HOUSE

The group of panels which is to adorn the facade on the Huntington avenue side of the new opera house at Boston, Mass., has been practically completed and will be placed in position within a few weeks. The plaster models will be set up at once for the purpose of determining the exact shade of coloring to be used in the permanent work to agree with the general color tone of the building.

The group consists of three large panels, representing Drama, Music and Dancing, flanked by two small foliage panels. The large pieces are 11 feet in length and 4 feet high, while the foliage panels are but 1 foot 4 inches in length but of the same height as the central pieces. The panels will be placed directly beneath the cornice, about 40 feet above the level of the sidewalk.

Each of the panels, though representing one effect, is divided into three groups. The center panel, Music, shows the three principal divisions of that art. In the center, seated beneath a wide spreading oak, are the figures of two boys playing on pipes, representing pastoral music. The group at the right, representing operatic music, consists of two dramatically posed figures and the swan. On the left is a woman singing, a boy swinging the censor and a draped figure seated at the harp, the whole symbolic of sacred music.

The right hand panel, Dancing, is composed of much lighter lines, the whole effect being graceful and swaying, without the severity of the central panel. In the center is a nude figure in the free abandon of the dance. The presence of two burning tripods on either side of the dancer suggests that the dance, if not religious, is at least of a ritualistic character. On the left of this panel is a group watching the dancer. The group at the right consists of a man sitting at the foot of a tree and the graceful figure of a woman, with outstretched arms, apparently endeavoring to persuade a soldier to join in the dance.

In the center of the left hand panel, representing the Drama, is the figure of a draped woman holding aloft the masks of comedy and tragedy. At her right is a group of figures writhing on the ground, while on the left is a drunken satyr reclining on the ground with two wood nymphs pouring libations over him.

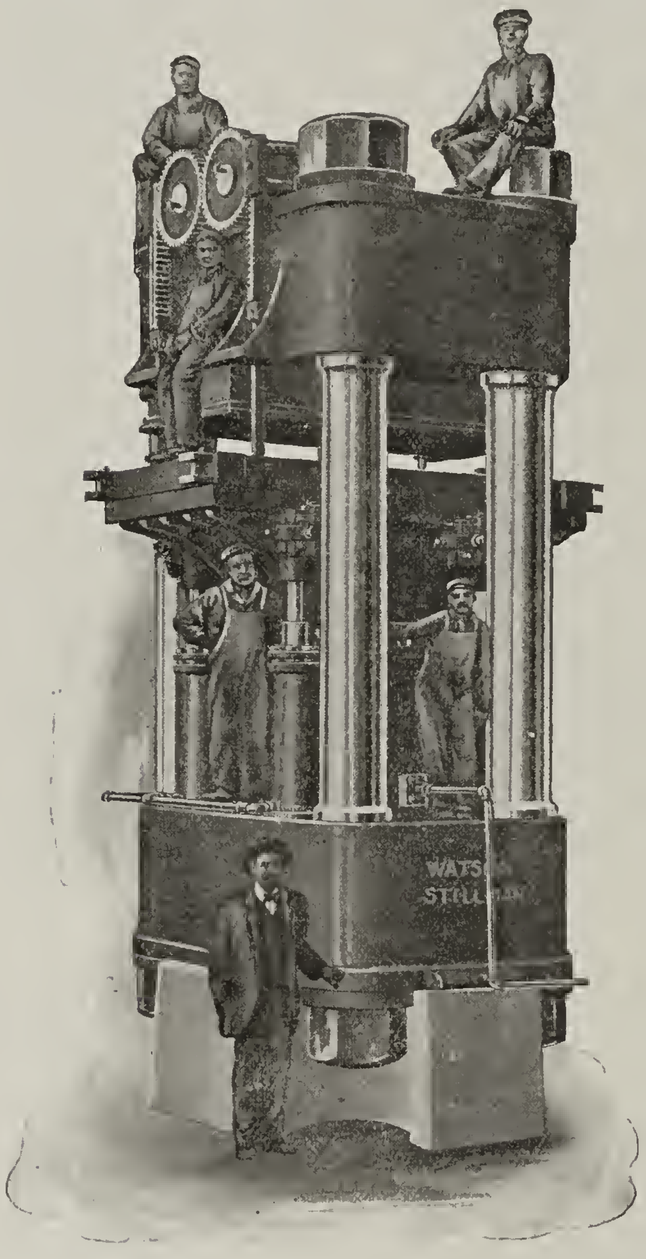
The foliage panels consist of a wide spreading oak with dense foliage. The background of the panels will be a blue glaze, and it is for the purpose of determining the shade of blue to use that the plaster panels are to be put up. The figures will be white terra cotta presenting a silhouetted effect against the blue background. As the only foliage used in the panels is that of the oak, the treatment of the work taken in conjunction with the background, the color of which suggests the sky, gives the appearance of the entire scene being laid in an oak grove.

The panels are the work of a well-known Boston sculptor, Bela L. Pratt, and are considered as being one of his best efforts. The entire work was completed in less than five months, which is an almost increditably short time for producing a work of such magnitude and merit.

A NEW 4000 TON HYDRAULIC PRESS

Almost every large hydraulic press embodies some peculiar features or operates under unusual conditions. The Watson-Stillman Press shown in the illustrations is interesting not only on account of its large size, but it was built under specifications which stipulated that the moving platen should not spring more than 1/100 of an inch under the maximum load of 4,000 tons.

The machine was specially designed by the Watson-Stillman Co., of New York, to compress a plastic material to almost uniform thickness within a mould of which the upper and moving platen form the top and bottom faces respectively. The sides of this mould consist of a practically solid steel band 7 inches high and 5 inches thick, which rests on the moving platen while the material is under pressure. Absolutely uniform dimensions and great density of finished product are two essential requirements of the press. The extent to which these are secured may be inferred from the fact that the top of the mould clears the sides by about 1/64 of an inch and that 8,000,000 pounds pressure can be equally distributed over the mould (about 25 square feet in area and about 9 feet across the diagonal).



To obtain this enormous pressure upon the material in the mould, an operating pressure of 5,800 pounds per square inch is required upon the main ram, which is 42 inches in diameter. With the exception of the ram, which is of chilled iron, all parts under stress are of steel. The three platens are steel castings, and the columns are turned from a high grade of machinery steel. The cylinder is cast from nickel steel, which, as is well known, is far superior to ordinary carbon steel in strength and toughness, and permits of the lightest weight of metal to safely perform a given duty. This steel construction keeps the total weight of the machine to the comparatively low limit of 115 pounds and also makes a press of much smaller dimensions than any cast iron machine of equal power.

The stroke of the ram is 18 inches, but the actual work of compression is accomplished through less than one tenth of that distance. A hydraulic accumulator is used to speed the ram up to load and the operating pressure is then taken direct from the hydraulic pumps.

After the material has been compressed, the mould is stripped by raising the sides. This is accomplished by simultaneously turning the operating pressure into the four 6-inch stripping cylinders, whose piston rods pass up through the moving platen and rest near the corners of the flask. Any inequality of pressure from the cylinders or tendency of the flask to stick in spots is prevented by racks and pinions, effecting the even raising or lowering of the flask.

The two corners of the flask on each end are made to move uniformly by the intermeshing of the pinions at the center, while the corresponding movement of one end with reference to the other is assured by mounting the two pinions of the same side upon the same shaft. It is thus evident that force exerted on one corner would be equally distributed to raise the whole flask. This prevents strain and bad alignment. The stripping cylinder rams have a travel of 23¼ inches, so that they will bring the flask down into position on the moving platen when the main ram is at the extreme bottom of its stroke.

The rain ram lowers by gravity when the operating pressure is released and thus sends the water in the cylinder back into the reservoir.

TESTS OF REINFORCED CONCRETE BEAMS

Bulletin No. 29, Tests of Reinforced Concrete Beams: Resistance to Web Stresses, By Arthur N. Talbot, of the Engineering Experiment Station of the University of Illinois, gives important new data on the resistance of reinforced concrete beams to web stresses or to so-called shear failures. Although a considerable fund of information has accumulated bearing on the part taken by the resistance of longitudinal reinforcement and the compressive resistance of concrete, the data on web resistance are less definite and less complete. The tests call attention again to the fact that diagonal tension failures should be carefully guarded against, since they may occur suddenly and without warning. The bulletin treats of the effect of strength of concrete, of the effectiveness of those elements which add stiffness to the beam, and of the advantages and effectiveness of different types of metallic web reinforcement. This monograph is one of the most important bulletins issued by the Engineering Experiment Station.

Copies may be obtained gratis upon application to the director, Engineering Experiment Station, Urbana, Illinois.

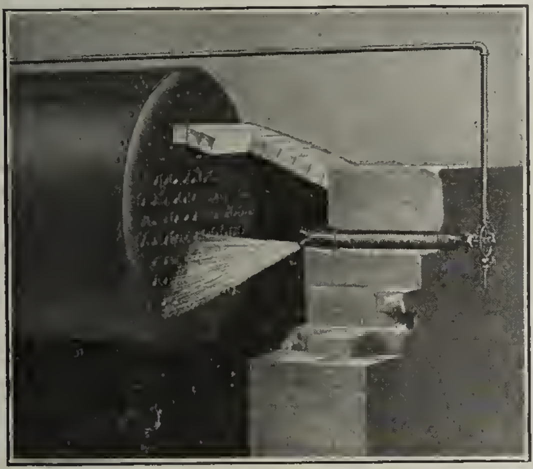
L. P. BRECKENRIDGE,
Director of the Engineering Experiment Station.

THE MARION FLUE BLOWER

The Marion Flue Blower is a permanent fixture in the rear wall of boiler opposite center of flue space and by its use the life of the boiler is prolonged by keeping the soot from tubes.

It is well known that the soot if allowed to remain on the tubes will precipitate sulphuric acid causing the accumulation of soot causing great loss of fuel.

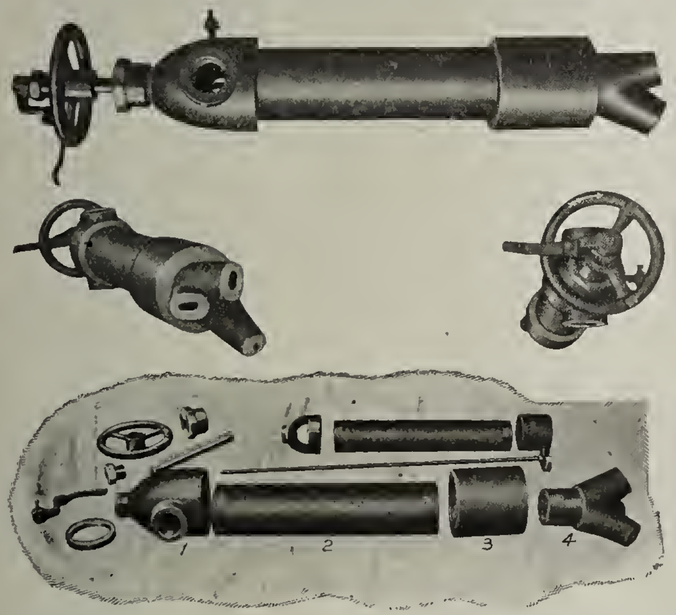
With the Marion Flue Blower the soot is blown in direction of natural draft out through the chimney cleaning the boiler while in commission, thereby avoiding strains which occur in old method of opening the front of boiler, causing flues and seams to leak.



The Nozzle Rotates. Each Opening in Nozzle Blows One-Third of Flues at a Time. We Furnish Different Size Nozzles as Required and Positively Guarantee to Blow Every Flue Clean

TO INSTALL.

Measure to point on rear wall opposite center of tube space (not center of boiler). Provide opening through wall large enough to admit blower. Place blower in opening so end of cup casting is even with the brick wall on inside. Be careful to have blower square with boiler, and level. Replace brick and tamp with fire clay. Connect 1½ in. pipe on most convenient side, plug one opening. Place a union between 1½ in. "T" reduced on bottom side of valve, to blow out condensation. Steam can be taken from boiler direct or any convenient line.



The Above Cuts Show Different Views of Blower, and Parts, but does not Show the Large End Cup Casting that Protects the Nozzle

If blower does not operate satisfactory after following above instructions, notify us at once.

TO OPERATE.

Open ½ in. valve and blow out all condensation. Close this valve and pet cock on blower. Open 1½ in. valve and revolve hand wheel slowly. Raise spring connceted to valve and revolve hand wheel slowly. Raise spring connected to valve stem and move to next notch on hand wheel. Repeat operation as before until all flues are clean. One opening of nozzle of blower is operated at a time, the inside valve closing ports of others.

Practice only can determine the number of revolutions of hand wheel necessary, depending entirely on amount of soot accumulated.

Operate blower often—every 2 or 3 hours to get best results for SAVING FUEL.

Open pet cock on bottom side of blower when through blowing.

ADVANTAGES OF MARION BLOWER OVER OLD WAY.

1. It will save at least 10% of your fuel.
2. It will insure you clean tubes.
3. It will prevent the accumulation of soot.
4. It will prolong the life of the boiler.
5. It will save the cost of steam hose.

The above are only a few of the great number of advantages of our flue blower over the old way.

If you wish to save money on your coal bills, write to the Marion Machine, Foundry & Supply Co., Marion, Ind.

◆

IT TAKES MANY "IFS" TO MAKE A GOOD CEMENT TILE

MAKERS OF CEMENT TILE SAY—

If the sand is perfectly clean—

If the cement is first-class—and

If the sand and cement are used in "proper" proportions—then

If the sand and cement are properly mixed—and

If the mixture is not too wet or too dry (take your choice)—then

If the mixture is used at once—and

If the mixture is thoroughly tamped in the moulds—then

If the moulds are not taken away too soon—and

If the tile are not allowed to stand in the sun or wind—and

If the tile are properly "cured"—then the product *may be* all right to use for drainage purposes, and *may* last for some time

If the action of water does not wash out the cement and leave only a crumbling mass of sand.

The presence of one IF in any business transaction would make almost any man hesitate. When the IFS are innumerable—well, who can afford to take a chance? There are too many IFS connected with the making of cement tile—

THERE ARE NO IFS WITH VITRIFIED CLAY TILE

Tested for centuries, solid as granite; when in place indestructible by anything except a convulsion of the earth; not subject to erosion by water; lasting qualities measured only by time.

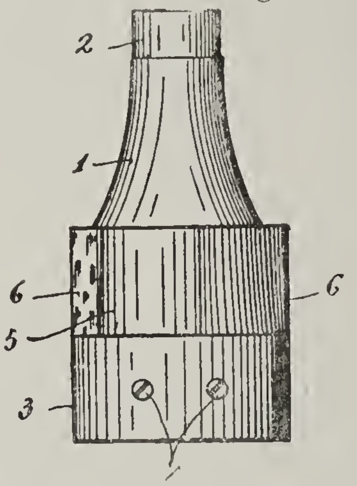
Has the county a right to experiment with cement tile at the expense of the farmers in the drainage district? Use Vitrified Clay Tile and you will be absolutely safe and sure.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

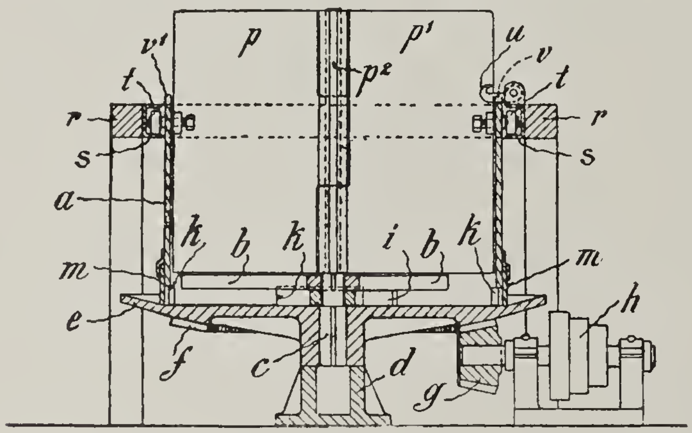
911,245. Plunger for Tile-Machines. George F. Kiel and Christian F. Mickelson, Sherburn, Minn. Filed May 15, 1908. Serial No. 433,014.

A plunger of the kind described, having a detachable follower ring applied to the lower end portion thereof and having just above said follower ring a detachable sectional packing ring, certain of the sections of which are tapered circumferentially of said plunger with their relatively thin ends tapered longitudinally of said plunger and with their relatively thick ends extending approximately parallel to the axis of said plunger and coincident with perimeter of said follower ring, substantially as described.



911,816. Charger for Ceramic Materials. Christian Gielow, Gorlitz, Germany, assignor to Richard Raupach Maschinenfabrik Goerlitz, G. M. B. H., Gorlitz, Germany. Filed July 23, 1908. Serial No. 444,974.

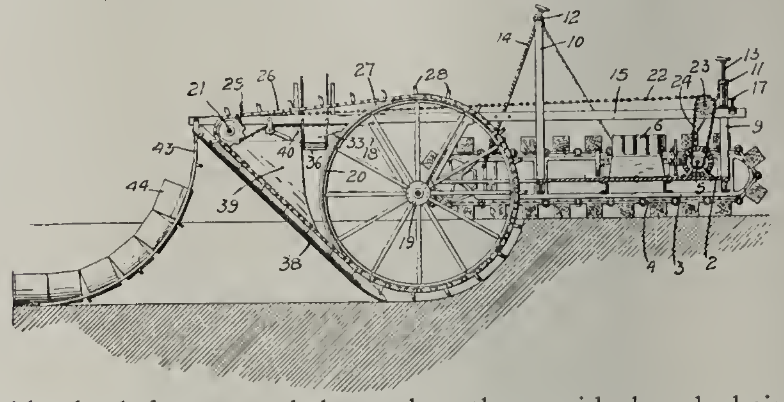
In a charger for ceramic materials, the combination with a hopper of circular section having a plurality of openings in its lower periphery, of a rotatory bottom of a larger diameter beneath said hopper, a plurality of scrapers fastened in said hopper adjoining its openings and bent in one direction and adapted to sweep said rotatory bottom, rotatory knives oppositely bent to said scrapers and adapted to work together with them, means for driving said rotatory bottom and said rotatory knives, partitions in said hopper for dividing it into compartments, and a stationary scraper forming the external continuation of one of said scrapers and adapted to sweep the external annular portion of said rotatory bottom.



911,564. Tile-Ditching Machine. Emil A. Anderson, Swea City, Iowa. Filed Oct. 1, 1908. Serial No. 455,698.

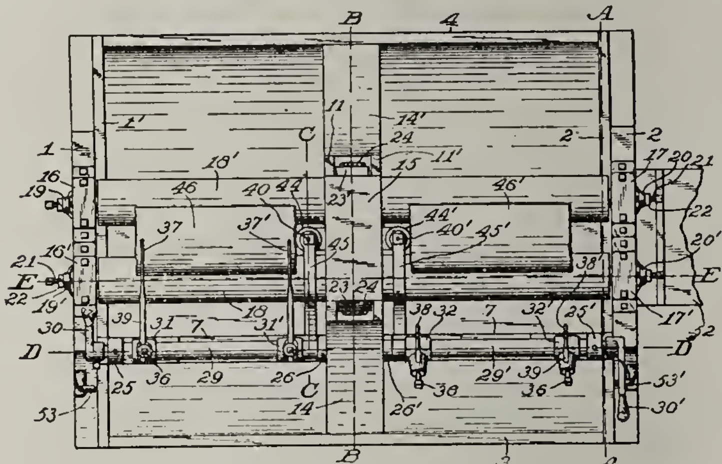
In a ditching machine, an excavator wheel arranged to revolve in a vertical plane, an excavator belt carried by said wheel and having a series of excavator blades or shovels, said blades being adapted to discharge the excavated material upon the periphery of said wheel and means for gathering said material from said wheel.

In a ditching machine, the combination with a frame, of a wheel supported thereon, guides mounted on the periphery of said wheel on each side of the center thereof, belts arranged to engage said guides, a series of shovels or blades carried by said belts and extending across the periphery of said wheel from one belt to the other, said shovels being adapted to gather up the material and deposit it upon said wheel and means for gathering up the material from said wheel.



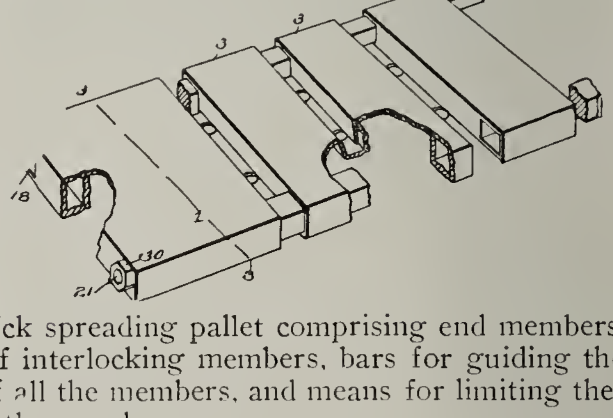
913,620. Drain-Tile Trimmer. Alexander Connor, Montezuma, Ind. Filed July 8, 1908. Serial No. 442,521.

A drain tile trimmer including a frame, horizontal twin turning-rollers journaled on the frame and having each a pulley thereon, a vertical guide mounted on the frame in a plane between the turning-rollers, a trimming-knife, and a guide for the trimming-knife.



A drain tile trimmer including a frame, horizontal twin turning-rollers journaled on the frame for supporting and rotating a tile section, a vertical axle mounted on the frame and extending between the turning rollers, a guide-roller for the section mounted rotatively on the axle, a trimming-knife, and a guide for the trimming-knife mounted on the frame.

914,262. Brick-Spreader Pallet and Truck Therefor. William Friberg, Portland, Oreg. Filed Dec. 3, 1907. Serial No. 404,916.



A brick spreading pallet comprising end members, a plurality of interlocking members, bars for guiding the movement of all the members, and means for limiting the separation of the members.

PACIFIC COAST NEWS ITEMS

Now that the rainy season is at an end building operations are on the increase and during the past two weeks there has been a great revival in this respect to be noted in San Francisco. The third anniversary of the great San Francisco fire is being celebrated here this week and local interests are pointing with pride the results that have been accomplished since the destruction of the business section of the city. There are dozens of blocks in the downtown section that are now entirely rebuilt and it is refreshing to note the appearance of these modern structures as compared with those destroyed. Solidity and beauty are the most noticeable features of the new structures in the new San Francisco and brick men feel that no small part of this is due to the use of their products. The retail business of the City is now back again almost entirely in the old section of the city and from now on growth will not be along the lines of making up for the losses occasioned by the fire but in substantial advancement.

Some idea of the part that the makers of brick have taken in the rebuilding of the city can be judged from the fact that about four out of every five of the structures in the downtown district are of this material and many concrete buildings have tile facings. The amount of work that has been done in the past three years may be judged by some of the figures of the fire. In all 28,000 buildings were destroyed and since that time there have been permits issued for 20,477 structures. These permits call for an expenditure of $132,250,300, but as almost all buildings have cost at least ten per cent more than the original contract price, it is estimated that there must have been spent to date on buildings alone almost $150,000,000. Now that the damage caused by the fire is in a large measure repaired, the great conflagration seems to be almost a blessing, for nothing else could have ever rid San Francisco of its thousands of old structures. With the downtown district rebuilt, attention will now be turned to the outlying districts, and it is here that the bulk of the building during the next two years will be done. Building permits during the month of March were in excess of $3,000,000, and contracts signed for work have just about equaled this figure.

There is no doubt but that the brick yards in the vicinity of San Francisco have a capacity largely in excess of the amounts of material of this character than can be used, but it is felt that most of the plants will work this season to a reasonable capacity and that the overproduction that has existed since the fire will be remedied. The matter of cheap transportation is now more of a consideration to brick makers than ever before, as prices are so low that only those with a way to get their product to the market cheaply can make a profit. New plants continue to be erected and old ones enlarged, but at the same time it is noticeable that others located less favorably are closing.

The Holmes Lime Company is able to report an increase in business in its brick department during the past month, and states that a very large number of contracts are now being figured on. The preponderance of Class "C" buildings that are now being erected means an increased call for common brick.

The Vallejo Brick Company has started operations for the season at its plant near Vallejo, and is now filling a number of fair sized contracts in San Francisco.

The Carquinez Brick & Tile Co. is having difficulty in filling all of its contracts for common brick and has given orders to rush work on the extensions that are being made to the plant. By the middle of June it is thought that the output of the plant will be 100,000 brick a day.

The big plant of the California Brick and Pottery Co., located at Glenn Ellen, Cal., has been started up after having been closed for about a year. It is the intention to devote the most of the attention this summer to the manufacture of terra cotta fireproofing. The market for this article has been in a rather demoralized shape for the past year, but many plants have abandoned this part of the business.

The E. B. McNear Brick Company has just installed a large Hoffman kiln at its plant on McNear's Point, and is now able to turn out about 75,000 brick a day. A new barge has just been added to its fleet and with its own tug boat transportation to San Francisco is done very economically.

The Patent Brick Company of San Francisco is planning to start its large plant within a few days, as its stock is now about exhausted and conditions at the plant are favorable for operations.

The Ione Firebrick Company is preparing to open the season at its big plant at Ione, Cal., and will be able to turn out more fire brick than ever with the extensive additions that have been made. Contracts are now on hand for about 1,000,000 brick and it is the intention to make about 2,500,000 between now and the latter part of November, when the plant is usually closed on account of the rains.

Moore & Cooper are starting a brick factory at New Alberni, B. C.

E. O. Simmons and associates of Los Angeles, are planning to erect a tile plant between El Centro and Imperial, Cal. It is proposed to manufacture tile for building and roofing purposes. Preparations are now being made for the erection of the plant.

A large pottery plant is to be erected by Sacramento parties on a tract of land just below Brighton.

The Board of Public Works of San Francisco has awarded the sewer contract in the Parkside district to Fred Leffler for $80,026.

The contract for furnishing the brick for the big packing plant in course of erection by the Swift Packing Company near Vancouver, Wash., has been secured by Ridden Bros. More than a million brick will be required in the work.

The plant and business of the Independent Brick Company have been taken over by the Southwest Brick Company of Inglewood, Cal. The plant has just been started for the season and offices have been opened in Los Angeles, where most of the product will be marketed.

Fred J. Goble, manager of the Hesa Brick Company, with offices in Berkeley, Cal., will leave on May 1st for Los Angeles where he is to be married to Miss Grace Enyeart.

CLAY RECORD.

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GEORGE H. HARTWELL, Editor

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"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

"When grit and industry make an alliance something must come of it."

Advertising brings about a better acquaintance and understanding between the manufacture and agent.

The man who is willing to advertise if you show him he can get his money back, is a sport who bets on a dead sure thing.

"Never put off till tomorrow what you can do today." A check for that subscription is what we refer to. See that it is sent at once.

Don't brag, don't bluff, and don't "knock." The hammer is a weapon dangerous to the man who uses it. He is quite as likely to smash his own fingers as to drive his purpose home. If you can stand on your own feet it is all right. It is wrong to try to kick the feet out from under some other fellow."

Fitzpatrick says:—"The remedy against loss of lives and fires lies with the State and with the municipality. As has so strenuously been advocated by the International Society of Building Commissioners, the authorities must exact a better order of construction, particularly in congested districts.

"Our building codes already classify the different kinds of construction. Really fireproof buildings are generally under class 'A'; then come buildings incombustible in themselves, but far from fireproof, class 'B;' and on down the line.

"It should be made a felony and punishable to the fullest limit of the law for any one to advertise or claim that his building, of an inferior class, belongs to a superior class. Indeed, the building departments should be called upon to label the existing buildings in their cities. We know of hundreds of such structures freely called fireproof, advertised as such and rented under those false pretenses, that are of second, third, fourth and fifth class construction, and whose contents are not one bit safer than were those in the Parker Building.

"Such a responsibility placed upon the city would make its officers exceedingly keen in conservatively interpreting that term themselves."

REINFORCED CONCRETE BUILDINGS

The reinforced concrete craze that struck the country a few years ago seems to be subsiding. There have been collapsing of buildings and such other troubles as to convince engineers that the material, though theoretically very good, was altogether too uncertain a quantity for practical use. An expert in an article in May "McClure's," tells us that the famous concrete piles in Baltimore Bay are rotting at the water's surface, and adds that "Concrete of the modern reinforced variety has been the cause of more bitter disappointment than any material we use." The "Architectural Record," that has generally been most favorable to reinforced concrete construction, editorially bemoans in the May number that "There are those who assume to be experts in reinforced concrete, but they are generally representatives of systems which are competing against each other;" and adds editorially, also, that concrete, according to the most reliable experts, is subject to surface disintegration according to the intensity of the heat and its duration and that if this cannot be prevented the concrete in turn must be protected, and that this can best be done with a hard burned fireclay tile covering, and avers that experiments in actual fires have demonstrated that when these tiles are properly secured in place so that they cannot be thrown off they are the best practical protection to the exposed surfaces of concrete construction.

It would seem that the layman had better steer clear of experimental concrete construction, and if he has anything to build use the old reliable brick and steel and fire-proof tile.

BUILDERS WHO BUY SECOND-HAND MATERIAL MUST PAY MORE FOR NEW BRICK

Every building contractor in the city of Denver, Colo., who has been buying, for use in foundations, bricks from the old Grant smelter, which is being dismantled, has been notified by the Brickmakers' association, commonly called the brick trust, that if he continues to buy the smelter bricks the trust will require him to pay a bonus of 50 cents above the market price in the future for all bricks that he may purchase from any of the firm represented in the Brickmakers' association.

The smelter bricks have been burned unusually hard through the action of the smelter fires and are considered very valuable for foundations beneath the surface, notwithstanding they are full of sulphur. The contractor for the razing of the smelter has been selling them at a low price and cutting in hard on the regular trade.

Officers of the Brickmakers' association refuse to admit that it is a trust or that any of its actions is in restraint of trade. They maintain that no action is taken by vote of the firms in the association, but that the president of the association has power to act in every emergency and his actions are ratified in consequence of a "gentlemen's agreement," without any formal action on the part of the membership that goes on record.

OBITUARY

B. P. Spiegler, proprietor of the Buckley (Illinois) Brick & Tile works, died at his home in that village.

Benjamin F. Lee, president of the Trent Tile Co. of Trenton, N. J., died at his late residence. He was a prominent business man and many notable men from the State attended his funeral, the gathering being the most noteworthy of any funeral ever held in the city.

John W. Stallings, a retired brick manufacturer, died at his home 637 West Barre st., Baltimore, Md., from paralysis, after an illness of six years. He was a member of the firm of J. W. Stallings & Co., and very prominent in Masonic circles.

A. R. Harwood, of Gonzales, Texas, died at his residence in that city after an illness extending over several years. He was one of the owners of the Sunset Brick & Tile Company and had large land holdings in the State. He leaves a large family.

FIRE! FIRE!! FIRE!!!

The brick and tile plant of Shepper & Morrow at Sugar Creek, Ohio, was badly damaged by fire. Partly covered by insurance.

The Fond du Lac (Wis.) Pressed Brick Company suffered a $1,000 loss by fire at their plant by two kiln sheds being burned.

Fire caught in the roofing of the shed over the kilns of the Brookhaven (Miss.) Pressed Brick Co.'s plant and quickly spread to the adjoining buildings and was not put out until damage to the amount of $6,500 was sustained. The plant is fully insured.

The Blue Island brick yard owned by the Illinois Brick Co., Chamber of Commerce, Chicago, was partly destroyed by fire, following in the wake of the recent heavy storm which blew down houses, uplifted trees and snapped telegraph and telephone poles throughout the country.

The Springdale plant of the Sioux City (Iowa) Brick & Tile works was completely destroyed by fire causing a loss of $50,000. Thomas Green is the president of the company and the largest stockholder. C. R. Marks is the secretary. The plant will be rebuilt at once.

An attempt was made to burn the plant of the New York Silica Brick Co. at South River, N. J. The night watchman found fires in four different places which he put out. The plant is equipped with modern fire fighting apparatus. The plant is about a quarter of a mile from the plant of the Sampson Brick Co. which was destroyed by fire a few nights previous.

LABORERS WORKING IN BRICKYARDS IN PATTERSON MAKE A FIND

Two Portuguese laborers working in a clay pit in the Beattie brickyard at Paterson, N. J., that had not been pumped out in seventeen years, overturned an old stump and found a quantity of gold coins lying among the roots. The coins were black from exposure.

There were French and American pieces. The American pieces were of the denomination of $5, $10 and $20. The total value of the gold pieces is believed to be about $300.

Bert Beattie, owner of the brickyard, bought one of the old coins for $20 and the workmen kept the remainder. Nobody knows how the coins came to be secreted in the old stump. None of the residents of Mountain View, where the brickyards are located, could recall any robbery in that section in which French and American gold coins were taken.

ACCIDENTS, DAMAGES AND LOSSES

An unknown Italian was shot and killed by the foreman of the Watrous Brick Co. at Fishkill, N. Y., while on a strike.

The interests of the Lawatsch & Lotz Brick Company, Kingston, N. Y., were sold at public auction by the sheriff under an execution.

Will Graham, a man employed in the Scandia Brick & Tile works at Madrid, Ia., was badly injured by being caught in the shafting.

W. J. Sulsbaugh was badly injured at the North Iowa Brick & Tile Co. plant at Mason City, Ia., by a clay car striking and running over him.

Fred Rushfeldt, secretary of the Albert Lea (Minn.) Brick & Tile Co., was held up at the point of a revolver while going to his home. The men were disappointed as he had nothing in his pockets.

The Bartlett Brick Co., which has a large plant at Greenport, N. Y., wants a receiver and Edward J. Collins of Newburgh, was appointed. Disagreement of the stockholders is the cause of the action.

Ray Bass, a colored man, is sueing the Mexico (Mo.) Brick & Fire Clay Co., for $12,500 damages, for alleged damages sustained last winter. He claims to have lost a hand.

John Christ, an employee of the Black Hawk Clay Mfg. Co., Sears, Ill., was buried under tons of clay, by not paying attention to the warning given by the foreman. He is now in the St. Anthony's Hospital.

Frank Goode, a negro, employed at the Rose Brick Co.'s plant at Positive, N. Y., got into altercation with the foreman and drew a knife across his throat, slightly injuring him. The negro was arrested.

Nicholas Pahs, a Turk, started work at the South Zanesville (Ohio) Brick works and an hour later was killed by a boulder falling upon him, caused by a blast on the shale bank.

The plant of the Holton (Mich.) Brick Co. was badly damaged by the recent storm. Seven of the eighteen sheds used for drying were completely ruined. The plant will be rebuilt at once. Patrick J. Connell is the president and general manager.

THE KING RADIATING HEAT DRYER

In the Clay Record of April 15, when we called the attention to our readers of the grand work of the King Radiated Heat Dryer, in speaking of the manager, we called him George A. King, where it should have been Edwin A. King. Many of our readers are well acquainted with Mr. King and know his ability as a dryer engineer; to those it is not necessary to call the attention of the error, but for fear there might be some that would address him in that manner and the letter go astray, we hasten to make the correction.

The article referred to above is on page 31 of the Clay Record. It shows some astonishing results taken from the anemometer which was placed on one of the Potomac Brick Co.'s dryers at Washington, D. C., and attested to by Elliot S. Morse, who is very well known to many of our readers.

You can get this data from the King Engineering Co. by writing them at Richmond, Va., and mentioning to them where and by whom you were informed.

THE GANGEWERE PROCESS FURNACE SLAG BRICK

This is the age of by-products and another one has been practically solved by R. C. Gangewere of Selma, Alabama. He is the inventor of a brick, the principal ingredient of which is slag, a production from blast furnaces instead of clay, as is found in ordinary brick.

Millions of tons of slag are allowed to go to waste every year, with practically no use for any purpose, but by the method of Mr. Gangewere, every bit of this slag procured at a price lower than clay, can be used and another step is taken towards the conservation of artificial matter.

Blast furnace slag has stood every test of the flames; in making it has gone through the fire, it is the final product after the consumption of every combustible material and hence, in the brick of this Selma man's manufacture, there is no burning process. Instead of clay burning in the kilns for days after being mixed, and delaying the shipment the brick are made by the dry process and are ready for building purposes in forty-eight hours.

These brick are made of over thirty per cent slag. This refuse from the furnace is pulverized to the fineness of powder, and is then mixed with other materials, is washed, passed into molds and allowed to harden, and the significant fact is that every ingredient of the brick, down to the smallest fractional per cent, has been through fire and is absolutely fireproof.

By the use of mineral coloring almost any tint of the rainbow can be had, any desirable shade can be bestowed.

The efficiency of this process is shown by the excellent tests which have recently been made. The compressive strength test, where 2,500 pounds to the square inch is the most that is ever required even in the highest skyscrapers, shows that these brick can stand the strain of 5,000 pounds to the square inch and yet remain unshattered.

The absorption test is excellent, it having only from 5 to 5½ per cent of absorption, whereas very few brick have less than 10 per cent.

The Gangewere brick have the smoothest possible texture and while they make beautiful face brick they are as cheaply made as the ordinary common brick. They can be made at almost any plant, the first being manufactured at the Kahn Brick Company works, of which Mr. Gangewere is superintendent. It is possible to make any quantity there without interfering with the other product.

The first slag brick by this process were made about two years ago. Since then the inventor has worked, perfecting his ideas, which he has had in his mind and studied for over twenty years. The prolonged study and appreciation has at last borne fruit and when introduced is sure to meet with favor.

BRICK PLENTIFUL BUT TEAMS SCARCE

"Brick are not scarce, but teams for delivering them are," said the manager of the City Brick Agency, at Portland, Oregon. "We have fully 2,000,000 brick on hand, and the kilns are all running, making more, but heavy horses are not plentiful enough to deliver the material as fast as needed."

Common "mud brick" are now delivered at $10 a thousand, which is $3 a thousand in advance of what the brick sold for a few years ago. Of course, contractors consider this rather high, and are inclined to blame the combination of brickmakers. The latter, however, aver that ground for brickmaking costs more than it used to; that labor is much higher; that the kilns are much farther out than formerly, and that fuel has also advanced materially. In the meantime many jobs are held up because brick cannot be procured, and a number of bricklayers are compelled to remain idle at a time of year when outdoor work can be pursued with the most vigor.

FOREIGN CONCERN MAY SUE FOR COLLECTION OF A DEBT

A decision of importance to foreign corporations, holding that they can bring suit in the Illinois courts to collect debts and that they may send sales agents to take orders for goods without violating the foreign corporation act of 1905, was given by Judge Ball in the Superior Court.

Judge Ball holds that the bringing of a suit by a foreign corporation to collect a debt is not an exercise of a corporate function within the meaning of the law. The decision is brief and is said to be the first of its kind since the enactment of 1905.

The Ohlemacher Brick Company of Michigan City, Ind., claimed that C. L. McCall, mason contractor, owed for brick which were delivered to build a house for William A. Waite. Waite filed a plea setting up that the complainant was a foreign corporation organized for profit and had not complied with the foreign corporation act.

"The proof showed," says the court, "that the complainant had transacted no business in this state except to bring this suit. The question to be solved is this: 'Is the bringing of a suit in our courts by a foreign corporation to collect a debt, as such, an exercise of its corporate power?' So it seems at first glance that the complainant is within the law.

"But is that the intention of the lawmaking powers? This question has not been passed upon by our Supreme Court. All the cases cited or examined are based upon the statute as it stood prior to the act of 1905.

"The sending of sales agents by a foreign corporation into Illinois to take orders for goods, such orders to be accepted and filled and shipped, if accepted, at the home office of such a corporation, is not a violation of the statute.

"The right to sue is not based on a comity, but is based on the right to enforce, in another jurisdiction, a valid contract. To give this statute its literal meaning would be to violate the interstate commerce clause of the Constitution.

"The scope of the act of 1905 is limited by its title to the doing of business in this state."

BRICK TRADE OUTLOOK GOOD IN BROWN CO.

The prospects for the coming brickmaking season loom up bright and, it is expected, that much work will be done in the brickyards in Brown county, Wis., this summer. Brown county ranks as one of the leading centers in the brickmaking industry in that section and most of the plants are already operating. The Barkhausen Brick Company, Green Bay, commenced the season's work a short time ago and is employing as large a crew of men as in past seasons. At the present time the company is manufacturing pressed brick, but in a short time will start putting out the red sand mold brick. The company has several large contracts to fill, most of which are in Milwaukee.

All of the brickyards were sold out this spring and this alone will mean a big demand. The companies expect to be kept in operation from now until the first of December.

The output last year of the Barkhausen Company was about 21,000 brick a day and, it is expected, that it will be increased this year to 24,000 a day. The pressed brick manufactured this year will be of a better class and this will enable it to be used for veneering purposes.

Taken as a whole that the demand will be large and that these brickyards have several large orders, both in the city and other localities, the companies look forward to a banner year in the brickmaking line.

In March the King Engineering Co., Richmond, Va., remodeled a six tunnel Pittsburg dryer on the yard of the Washington (D. C.) Brick & Terra Cotta Co., which is known as the John Miller yard, and in April the same company remodeled another ten tunnel Sherer dryer for the Potomac Brick Co., in the same city.

THE TRAVELING SALESMAN AT LAST TAKES HIS PLACE IN THE GALLERY OF STAGE TYPES

There are few professions or modes of business life, or even methods of artisanship, which have not been idealized by the diligent searching play-wright into stage puppets which, either through caricature or exaggeration, are evolved into comedy roles whose chief reason for existence is a mission of laugh production. The lawyer, doctor, banker, baker, the tradesman and even the newspaper reporter are well known stage types, but "The Traveling Salesman," the new comedy which is meeting with such great success at the Illinois Theatre, Chicago, is probably the first play to take the "drummer"—the man who sells goods on the road—and turn him into the most important character of a footlight entertainment.

Of course, the traveling man has been seen in a great many plays, but either in a minor role, or in a character so exaggerated, that it is scarcely recognizable. But James Forbes, who became famous as a creator of unique stage characters through his never-to-be-forgotten Patricia O'Brien of "The Chorus Lady," has succeeded wonderfully in reproducing on the stage a real, live traveling salesman, who is neither exaggerated nor caricatured, but is, nevertheless supremely funny at all times.

His Bob Blake, the leading character, is a type familiar to any one who has traveled about much. He is a nattily-dressed, glib-tongued, prosperous-looking road salesman, ever ready for a sale or flirtation, and he goes his cheerful way through four acts of the play leaving behind him a trail of laughter. When Mr. Forbes wrote this play, he kept in mind a breezy young clothing salesman whom he had known out west, and the prototype of Bob Blake is actually selling goods throughout the Western states with headquarters in Chicago.

The play is being presented with the original New York company which comprises Frank J. McIntyre, Elsie Ferguson, William Beach, Sarah McVicker, Arthur Shaw, Percival T. Moore, Edward Ellis, Nicholas Burnham, H. D. Blakemore, R. C. Turner, Richard Ogden and Maude E. Sinclair.

Performances nightly, Sunday included, matinees Wednesday and Saturday. Prices, 50c to $1.50, no higher, and mail or telegraph orders always receive especial attention at The Illinois.

NEW CONCERN AT SEGUIN TO TAKE OVER PLANT AND MAKE ALL KINDS OF TILE AND BRICK

The organization of the $75,000 brick company to take over the Lone Star brick plant in Seguin, Texas, has been perfected and application will be made to the Secretary of State at once for a charter.

The name of the new company is the Seguin Vitrified Paving and Face Brick Company. Dr. O. G. Pearson will be president of the new company, with County Judge H. M. Wurzbach, vice-president, R. L. Wupperman, secretary and C. E. Tips, president of the First National Bank, treasurer.

The new company will install complete new machinery to manufacture paving brick, roofing tile, facing brick and ordinary building brick. The clay bed from which it will work comprises 200 acres of what is said to be the best brick clay bed south of Coffeyville, Kan. Heretofore the old company had made a very superior grade of building brick, but was handicapped by lack of capital to enter into the manufacture of other grades. With the new organization and new capital it will be in shape to put on the market any class of brick or tile now in use and to compete in the Southwest with any company now operating. The new company expects to employ from 100 to 150 men to start with, and there is no reason why this number should not be doubled within a year.

ANOTHER ROOFING TILE PLANT FOR OHIO

New Lexington, Ohio, is to have a new $100,000 factory, the erection of which will begin within the next 30 days. The Ludowici-Celadon Co., now operating a large plant west of town for the manufacture of roofing tile, has decided to build another plant here to make special patterns of tile. This new industry will employ at least 150 men.

This action of the Ludowici people speaks well for the superior quality of the clays here. Other matters taken into consideration were the excellent shipping facilities, and the gas supply from the St. Joseph wells.

The company has a special pipe line from the gas field to their present plant.

The new plant will be erected just east of the present plant, and will be a two-story brick structure. A number of special kilns will also be required. The factory will be electric driven throughout and modern in every particular. The plans are now being drawn and ground will be broken within 30 days.

This industry will mean much to New Lexington, as it will bring not less than 100 new families here and houses will soon be in great demand. The company at this time employs 175 men and owns about 50 houses near the plant. It is possible that arrangements will be made to run a special train between the plant and town each day to carry the workmen.

The product of the Ludowici plant is in great demand in all parts of the world. This institution has been running about seven years and has not lost a single day.

DIRECTORS AND STOCKHOLDERS CANNOT AGREE AND A RECEIVER IS ASKED

The Bartlett Brick Company, which has an extensive plant in the town of Greenport, Columbia county, N. Y., a short distance north of Hudson, wants a receiver. The application is made by Frederick W. Bartlett and others for the voluntary dissolution of the Bartlett Brick Company and Erward J. Collins, of Newburg, has been appointed referee to take testimony.

The company was organized in 1906 with a capital of $200,000, to take over properties formerly of F. W. Bartlett and G. C. Bartlett at Hudson, and Bartlett and Savage, held under lease from D. Maitland Armstrong at Roseton. In 1907 the capital stock was increased to $300,000. The directors were F. W. Bartlett, G. A. Bartlett, Mary H. Bartlett, Walter Hall, John B. Rose, William Hilton, C. E. Townsend and Everett Fowler, of Haverstraw. The directors and stockholders were unable to agree in the management of the company, and for this reason only it is desired to dissolve the corporation which is not only solvent, but is the owner of large valuable property. A receiver will no doubt be appointed who will wind up the affairs of the company.

ORGANIZE TO PROMOTE CLAY INTERESTS

To promote a more general use of brick as a building material and to demonstrate its superior merits as regards beauty, durability, safety and economy, an association of brick manufacturers and contractors has been organized at the Evansville, Ind., Builders' Exchange.

Geo. W. Googe was elected president; John Andres was elected secretary-treasurer. The president appointed the following committee: Advertising, John Andres, John Koch, and Thomas Smith; legislation, James Scarborough, Anton Kessler and Charles Lant.

Believing that the public is largely uninformed as to the excellence of this material, the association pledges its support to a campaign of education through the agency of the press and personal solicitation.

They will ask council to extend the fire limits and ask enforcement of the fire regulations which are now on the books.

SALT LAKE CITY TO HAVE SAND-LIME BRICK PLANT

A brick plant to cost in the neighborhood of $50,000, is a new addition promised to the manufacturing interests of Salt Lake City, Utah. The construction of a plant similar to the one at Idaho Falls, Idaho was decided on at a meeting of the directors of the Inter-Mountain Cement & Brick Company, the owners of the Idaho plant. This plant will have a capacity of 20,000 brick per day.

The purpose of the company is to manufacture what is known as a sand-lime brick, and to prepare hydrated lime in sacks ready for the trade, also to mix and supply mortar for the trade and deliver it to any part of the city. Artificial stone will also be manufactured by the company in addition to the other products.

It is thought that the plant will be ready for operation within 90 days. The location of the new plant has not yet been announced, but no difficulty will be experienced in finding the right kind of earth material, as there are several places in the valley where it can be secured.

The officers of the company are: John C. Sharp, president; Thomas R. Cutler, Jr., vice-president, and J. Palmer Sharp, secretary and treasurer. The board of directors is composed of the following members: John C. Sharp, Thomas R. Cutler, John Henry Smith, Edward P. Ashton, Matthew Noal, William Noal and Mark Austin. The company is capitalized at $25,000, most of which has been paid up. Messrs. Cutler and Matthew Noal will leave for the East at once for the purpose of purchasing material for the new plant.

DOBBINS WILL RUN FOR CITY TREASURER

Murrell Dobbins, millionaire pottery manufacturer and formerly the largest individual brick manufacturer in the United States, will accept the Republican nomination for City Treasurer to succeed Robert R. Bringhurst at Philadelphia.

"The offer of the nomination, which came to me was a great surprise and I appreciate the honor greatly," said Mr. Dobbins. "Certainly it was a greater surprise to no one than to myself, for I never made a move looking to the winning of the nomination.

"It was offered to me without a promise being exacted from me, and if I am elected City Treasurer I shall take the office without having made a single pledge to the Republican leaders."

Friends of Mr. Dobbins declare that he would not think of accepting the place under any other conditions.

Although Mr. Dobbins has been a prominent Republican for twenty or thirty years he has never held an elective office. At the present time he is the president of the Board of Inspectors of the Eastern Penitentiary and was for sixteen years a member of the Board of Port Wardens.

DIRECTORS CAN EXAMINE TERRA COTTA BOOKS

The Atlantic Terra Cotta Co., Perth Amboy, N. J., which turned out De Forest Grant as president at the annual meeting in January and then faced successfully a federal grand jury investigation suffered its first set-back when Supreme Court Justice Dayton issued a peremptory mandamus compelling the company, its president, William H. Powell and its other officers to give permission to Grant, Dwight W. Taylor and William Menice, all members of the board of directors, to examine any books, letters, records or any of the company's plants they choose to between tomorrow and June 15.

The company maintained that the only object of the examination was to enable the three directors to ruin the company.

CLAY PRODUCERS WANT NO FREE CLAY

Washington, May 13—Representatives of clay-producing companies in a half dozen states were in Washington discussing with members of Congress the duty on clay imports.

Among the Georgians are Cecil Morgan, of the Georgia Kaolin Company, of Macon, and J. C. Lamar and J. B. Lamar, of the Lamar Kaolin Company, of Augusta.

They point out that clays form the basis of vast allied manufacturing interests, among them the makers of porcelain, sanitary wares, wall paper, paints, etc.

The clay producers want the present rate of $2.50 per ton on china and English clays maintained, if it cannot be increased. They would much prefer to have it increased 100 per cent. They are everlastingly opposed to free clay imports. They insist that it would ruin their business, cause them to lay off men or to reduce wages, and paralyze an industry that is rapidly growing in importance.

Mr. Morgan said that the committee was entirely satisfied with the replies they received from the Republican Senators in charge of the tariff bill. They believe the $2.50 duty will be retained. Mr. Morgan expects to remain in the hope that this particular paragraph may be taken up and passed by the Senate.

The president of the American Clay Company, P. W. Martin, left for New York. Other representatives of the clay producers in session included gentlemen from Pennsylvania, Maryland, North Carolina, South Carolina, Georgia and Florida.

CLAYS IN FLORIDA

The valuable deposits of clay that are found so widely distributed in northern and central Florida have to the present time received little use except in the manufacture of common building brick. They are, however, well suited to a variety of purposes, and some front and fire brick, red earthenware, tile, and pottery have been produced.

The brickmaking industry of the State is most active near the large centers of population, where the demand for the product is good. About 27 factories are in operation in 13 counties. The factories are most numerous near the northern line of the State, because the clays are there most abundant.

In addition to the supply necessary to meet the home demand, considerable clay is mined in Florida and shipped to some of the Northern States, where it is sold under the name of ball clay and used for the manufacture of pottery. A plant for the manufacture of pottery from this clay, which is mined in Putnam and Lake counties, has recently been established at Jacksonville.

Practically all the clays which are now used for brick and tile manufacture in Florida burn to a bright-red or yellow color at comparatively low temperatures. However, the products of some of the kilns show every gradation in color from light buff to nearly black, the variations being usually due to imperfect oxidation of the iron compounds present, the lighter colors resulting from burning at too low a temperature and the darker from lack of sufficient air to furnish oxygen. When clays containing both lime and iron are properly burned a buff color may result.

Some brief notes on the geology of the Florida clays, by George C. Matson, of the United States Geological Survey, have just been published by the Survey in an advance chapter from Bulletin 380 (380-K), which forms Part I of "Contributions to Economic Geology, 1908." This chapter, which contains also lists of the Survey publications relating to clays, fuller's earth, lime and magnesite, gypsum and plasters, glass sand, abrasives, mineral paint, and phosphates, will be sent free of charge to anyone making application to the Director, United States Geological Survey, Washington, D. C.

SAND OR LIME BRICK OR BLOCK NEWS

The plant of the Fremont Granite Brick Co. at Fremont, Neb., has been put into operation and shipments of brick are being made daily. Numerous orders are coming in.

The Columbia Silicate Brick Co. have started the building of their new plant and expect to have it in operation within the next sixty days.

The recent wind storm took off the roof of the Webster City (Ia.) cement pipe and tile factory as well as doing much damage in the surrounding country.

The Wisconsin Composite Brick Co., Milwaukee, Wis., is putting up a two story factory, 100x150 feet, at Canal street and 1st ave., which when equipped will cost $40,000.

The Crawford Paving Co., Washington, D. C., are now turning out silicate stone of all dimensions, the quality of which is better that Indiana limestone. The International Division Method process is used.

C. F. Pelton, who built and operated a cement tile factory in Rock Falls, Ill., will enlarge his plant so that the output will be many times larger. Mr. Pelton is a tile layer and engineer.

The plant of the Tri-City Sandstone Brick Co., Moline, Ill., is to be used by the J. C. Scott Paint Co. of Freeport, who will remove to that city. The company makes a specialty of dip paints.

You will notice on one of the following pages an advertisement of R. C. Gangewere of Selma, Ala., who is now introducing a new slag brick, which he has had patented. A plant of this kind is now in operation in the South.

Paul Fuchs, 611 Carmen ave., Chicago, is meeting with all kinds of success with his enamel for clay brick, cement or sand-lime brick, concrete blocks, etc. See his announcement on another page of this issue.

The Inter-Mountain Cement & Brick Co. will erect at once in Salt Lake City, Utah, a similar plant to the one they now are operating in Idaho Falls, Idaho. The plant will cost $50,000. John C. Sharp is president, Thomas R. Cutler, Jr. vice-president, and J. P. Sharp, secretary and treasurer.

POTTERY NEWS ITEMS

The Carrollton (O.) Pottery Co. have found it necessary to enlarge their plant so as to take care of their trade.

J. W. Towery is interested in the establishing of a pottery at Casar, N. C.

The Canonsburg Pottery Co. at Canonsburg, Pa., will build at once three more kilns, which will give to this plant 16 kilns.

The Boulder (Col.) Commercial Association is considering the locating of some pottery there so as to handle the various kinds of clay found there.

The work of building at Sebring, O., a seven kiln pottery by Oliver H. Sebring and his associates will begin at once. This gives five potteries to Sebring.

The formation of the Buxton-Beatty Pottery Co., Columbus, O., with $60,000 capital stock and the purchase of the 10-kiln American Mutual Pottery plant at North Columbus, has been made.

FUCHS' ENAMELED BRICK

The talk of the town is the new building just erected by Mayor Mellar, of Michigan City, Ind. It is built of Excelsior Granite Brick and faced with Fuchs' Enameled Brick. It is very attractive and the builders and architects are giving it much consideration.

MISCELLANEOUS ITEMS

A brick yard has started up at Kilmath Falls, Oregon.

B. L. Tracy of Brandon, Oregon, is the promoter for a new brick yard, the machinery already being ordered.

Sherman Brady is preparing to build a three press brick plant at Houston, Texas.

Dr. S. Russell, MaComb, Ill., is installing machinery for the manufacture of brick, tile and hollow ware.

Charles Bishop of Kingston, N. Y., has leased the Staples Brickyard at Port Ewen, and will operate same.

F. R. Carter, Peoria, Ill., has purchased 46 acres of land in Cole Hollow for brick yard purposes.

The Kaaterskill Paving Brick Co.'s plant has been leased to the Catskill (N. Y.) Vitrified Brick Co., which has been organized under the laws of the state.

The Rockford (Wash.) Brickyard Co., have their first kiln completed turning out a first-quality of brick for sale in Spokane.

The Burnham Bros. Brick Co., Milwaukee, Wis., has been incorporated with $300,000 capital stock by John A. Burnham, G. E. Burnham, and C. L. Burnham.

The Queens Run Fire Brick Co., of Lock Haven, Pa., will build a branch plant at Dubois to cost $200,000. F. D. Halstead is the manager.

The Salve & Cotrill Brick & Tile Co., Shenandoah, Ia., has been incorporated with $16,000 capital stock by G. H. Cotrill and R. V. Salve.

The new plant of the Bradford (Pa.) Pressed Brick Co., at Lewis Run, Pa., is now completed and making first-class brick. The plant has a daily capacity of 80,000 brick.

The Waynesville (N. C.) Brick & Tile Co., has been organized to establish a brick plant with 20,000 daily capacity. W. C. Garrison, Clarence Miller and others are interested.

Bramhall Bros., Durant, Okla., has been incorporated with $20,000 capital stock and their plant will soon be ready to make brick. At the close of the season a dry press will be added.

Joseph H. Applegate and Addison H. Dey, who have been conducting a brick manufacturing works at Trenton, N. J., have dissolved partnership and the business will be continued by Mr. Applegate.

The Beatrice Brick Works, Beatrice, Neb., has been incorporated with $40,000 capital stock by Robert Klose, M. Hepperlen, D. M. McColery and W. N. Farlow. Each owns 80 shares.

W. C. Lorens of Kenton, has purchased the machinery at Samuel J. Reynold's brick and tile works at Smyrna, Del. Mr. Reynolds found it necessary to abandon the manufacture of clay goods on account of the clay being exhansted.

The Longmont (Col.) Brick & Tile Co., with $25,000 capital stock has been organized. The directors are: W. M. Stewardson, C. W. Stewardson, A. H. Gunning, T. M. Callahan and J. W. Paxton.

The Chesterfield (S. C.) Brick Co.'s plant, recently bought by J. D. Evans and the Evans Brick Co., have been consolidated and hereafter known as the Chesterfield Brick Plant. It will be under the management of Mr. Evans.

S. E. Echols of Altus, Okla., is investigating brick plants with a view of going into the business.

The Dysart (Ia.) Brick & Tile works have started up their plant and expect to have a record breaking season.

The Coffeyville (Kansas) brick plants pay three cents a thousand for gas on a five years' contract.

C. C. May of Galveston, has bought the plant of the Alvin (Texas) Brick Co. and will operate same. He is putting in additional kilns and enlarging its capacity.

The Watsontown (Pa.) Brick Co. are now increasing the capacity of their plant by adding several more Wilson kilns. The Wilson Kiln & Dryer Co. built the entire plant.

Dr. W. E. Fish of Anita, Ia., has sold the Aberdeen (S. Dak.) Brick Co. works to parties who will improve and operate them.

The Lewis (Ia.) Brick & Electric Light Co. have installed a four mold Boyd dry press in their plant and will hereafter make high-grade dry pressed brick.

The Grundy Center (Ia.) Brick & Tile Co. are building an addition to their brick and tile works. They will make hand made brick.

John Knox is organizing a company and will develop a clay deposit near Spirit Lake, Wash. It is planned to start making brick in July.

Directors of the Lehigh (Ia.) Clay Products Co. will decide during May if they build the $150,000 tile plant in Webster City, or hold it over until 1910.

A. Q Artz of Nampa, Idaho, and Mr. McCulb have gone to Wendell, where they have gone into the brickmaking business.

M. E. Mitchell has bought and opened up the Iowa Falls (Iowa) Brick & Tile works. The plant will be operated on a larger scale than when S. J. Galvin operated same. Mr. Bradshaw of Ft. Dodge, is interested with him.

The Chaska (Minn.) Brick & Tile Co., St. Paul, Minn., has been organized with $50,000 captial stock, by J. L. Corning and Mary E. Corning of St. Paul, and Fred Griener of Chaska.

The Northern Michigan Brick & Tile Co., recently incorporated to build a plant at St. Ignace, Mich., have purchased the machinery and equipment of the Mass City Brick Co., and will remove same; also have bought a 50,000 capacity steam dryer.

The Ft. Scott (Kansas) Brick Co. has bought a complete brick plant at Mound City and is moving same to Ft. Smith, so as to double the capacity of the plant there. Both plants at Mound City are being removed, one to Ft. Scott and the other to Caney.

On page 36 of this issue is the advertisement of A. P. Dyke, Hope, Ark., who is a well known factory locator and land broker. He has an exceptionally good offer for any brick or tile manufacturer who wishes to locate in that section. Read what he says and write to him.

The Reynoldsville (Pa.) Brick & Tile Co., makers of paving and building brick, with a daily capacity of 50,000 brick, use the Wilson kilns, which were constructed by the Wilson Kiln & Dryer Co., 210 West End Trust Bldg., Philadelphia. This company is building satisfactory kilns throughout the entire East.

Harry Stovall will establish a plant to make brick and tile at Athens, Ga.

J. A. Huddleston of Ballinger, Texas, is considering a pressed brick plant at that place.

The Sequin (Texas) Vitrified Paving & Face Brick Co. has been organized with $75,000.

Herman Imdicke of Meier Grove, R. D. from Melrose, Minn., has installed a soft mud brick machine having a capacity of 30,000 brick daily.

A. J. Dexter, has returned to Dayton, Wash. from California, and opened up the Dexter Brick works, which have been idle for some time.

George Townsley, brick manufacturer, has leased ten acres of land in West Toronto, Ontario, on the Silverhorn farm, on which he intends to erect a large plant.

Mexico, Mo., has a prospect for a new brick plant. The land known as the Congress land, belonging to the estate of J. J. Kulage, lately deceased, is to be acquired by a company to work it.

The Cimarron (N. M.) Brick and Tile Co. has been incorporated with $100,000 capital stock by J. C. Ronan, C. O. Pease and W. S. Kilpatric. They will build a pressed brick plant.

The Streator Clay Mfg. Co., Streator, Ill., recently elected the following officers: R. H. Green, president; James Green, vice-president, and John Connelly, secretary. Besides electing officers they increased the capital stock from $20,000 to $30,000.

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. **NEW YORK CITY**

Brick in Cook county (Chicago) are selling for $5.75 to $6.00 per thousand.

The F. D. Shaw Co. of Delaware, has been incorporated with $25,000 capital stock in Indiana.

The Suring (Wis.) Brick & Tile Co. have begun work at their plant which has a 30,000 daily capacity.

T. E. Irvin has bought the Patoka (Ill.) Brick & Tile works and is building another drying shed and kilns.

The Tramway (Wis.) Brick Co. have made repairs and are now operating their plant. One new kiln is being added Harry Sprink is the manager.

Mr. Perkins of Manhattan, Kansas, has purchased the Patterson farm at Garnett, Kansas, and expects to organize a brick company to work the shale beds.

Frank Smith, Belle Plaine, Ia., has doubled the capacity of the plant for making tile and enlarged the capacity for making brick.

Gus Ream, Dr. W. T. Harry and P. G. Brodway, under the firm name of Ream & Co., have leased the brick works at Eugene, Oregon, and will make brick this season.

The pressed brick and tile plant at Montrose, Col., owned my Mrs. G. A. Buckley, wife of the late Senator Buckley, is going up as fast as the machinery and material arrives.

The Ada (Okla.) Brick & Tile Co. has sold its plant to Cooper & Bones of Guthrie. The new owners will continue to operate the plant at its fullest capacity.

The Fremont (O.) Tile & Brick Co. has been incorporated with $20,000 capital stock by W. H. Swint, T. L. Fuchs, R. A. Nichols, A. A. Reynolds and D. B. Love.

The Athens (N. Y.) Brick Co. are to build a brick plant at Athens, work to start immediately. Capacity, 400,000 brick daily.

The Twin City Clay Mfg. Co., Uhrichsville, O., has been incorporated with $2,500 capital by W. P. Greenlee, W. E. Randall, O. D. McKinney, E. J. McIntyre, W. F. Wardell and J. W. Moore.

The Catskill Vitrified Brick Co., Catskill, N. Y., has been incorporated with $10,000 capital stock. Incorporators, Jacob Rice, Rondout, N. Y.; Arthur Conners, 17 Battery Place, New York, and Frank S. Gery, Reading, Pa.

The R. B. White Co., Painted Post, N. Y., has been incorporated to mine and treat clay and manufacture brick and tile. Capital stock, $40,000. Incorporators are R. B. White and B. Morse of Painted Post, L. K. Poloson of Corning.

Articles of incorporation were filed in Delaware for the Vulcan Fire Brick Co., Baltimore, Md. The incorporators are C. G. Chavalier, W. T. Stillwell and J. P. Tully. Capital stock, $200,000.

The Denton (Texas) Pressed Brick Co. are spending $30,000 on their new plant together with the repairs necessitated by the fire of several months ago. The plant will be ready to start within 60 days reports Henry Brandenberg, the superintendent.

The Columbus (Neb.) Brick Co. has been incorporated with $50,000 capital stock. Incorporators are M. D. Karr, J. S. Nichols, H. F. Hockenberger and R. S. Dickinson. They will spend $15,000 in placing new machinery in the plant.

The West-Gregg Brick Co. of Eldorado, Ill., has changed its name to the Eldorado Brick Company.

The Mercedes (Texas) Brick Co. has received an order for 400,000 brick to be used in enlarging the public school.

The Washburn Bros. Co. have purchased the brick yard property of Henry Corse at Glasco, N. Y.

Inquiry No. 3360 filed at Bureau of Manufacturers, Washington, D. C., asks to obtain information about machinery that may be used to treat kaolin.

The Northern Brick Co., Crescent, N. Y., has been organized with $6,000 capital stock by C. T. Allison and E. L. Allison of Stony Point and Walter Brunswick.

The Sedalia (Mo.) Clay Mfg. Co. is about ready to commence making brick, using temporary kilns until the permanent one can be built.

John A. Smola has bought the Wayland (Ia.) Brick & Tile Co. works and moved them from Winfield. He has started work at the factory for the season.

The Ladysmith (Wis.) Brick & Tile Co. has increased its capital stock from $3,000 to $5,000 and its directors from three to five.

Clarence Davidson has begun the manufacturer of brick at the brickyard in Westdale, Mass., recently purchased by him from William Trudeau.

Caleb C. Marshall has resigned his position as burner at the Catskill (N. Y.) Shale Brick works and accepted a similar position in Colorado.

J. H. Thomas, Turners Falls, Mass., has installed a machine at his brick works for crushing waste brick to mix with the clay so as to absorb the excessive moisture in the clay.

The Brownwood (Texas) Brick Co. is far exceeding the expectations of the stockholders and Manager Fay informs us that they will likely enlarge the plant to keep up with the demand.

The Lodi (Ill.) Brick & Tile Co. is about to begin making tile and brick for the season, under the splendid management of Nathan P. Goodell and John Madix. Many improvements have been made to the plant.

A. P. Dyke, Hope, Ark., who has a small ad on page 36 of this issue, is deveoloping oil and gas wells so that any one who would like to start a brick or tile factory there would find an exceedingly good proposition. They have a good market, fine shales and cheap fuel.

The
Coming Brick

At last it has been solved. Bricks can now be manufactured from furnace slag, much cheaper than clay, sand-lime or any other brick, both common or the finest face or press bricks. Crushing and transverse tests unquestionable.

Its cheapness of manufacture and its durability makes it the coming brick.

For particulars, address R. C. GANGEWERE, Patentee, Selma, Ala.

Will superintend erection of complete plants

BOOK WANTED

Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

Book, care Clay Record,
Chicago, Ill.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

Southern Brick & Tile Co.
Louisville, Ky.

Brick Plant for Sale or Lease

A conveniently located brick plant on the main channel of the James River, 90 miles from Richmond. 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address

MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va

FOR SALE

Profitable brick plant and business; 20,000 capacity. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago, Ill.

FOR SALE

One No. 20 Cyclone Disintegrator, made by the C. W. Raymond Co. Has been used about two weeks. Practically new. Address

COLUMBIA BRICK & PLASTER CO.
North East. Md.

BRICK PLANT FOR SALE

One of the most complete stiff mud brick plants in Pennsylvania, located on the Pennsylvania Railroad near Philadelphia. Daily capacity, 30,000. Chambers Machine, nine tunnel hot air dryer, eight round down draft kilns, one Dutch kiln, railroad siding to kilns. All equipped with the most up-to-date appliances. Can manufacture bricks at the lowest possible cost. Will sell at a sacrifice, and on easy terms. Good reasons for selling. A rare opportunity. Address S. C., care Clay Record, Chicago

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.

Address Brick Supt.,
P. O. Box 81, Coffeyville, Kans.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Bensing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32,000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12,000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address

J. M. CRABILL,
Clarinda, Iowa.

FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO
Norristown, Pa.

For Sale at a Bargain

Soft mud brick plant, one Hercules brick machine made by Horton Mfg. Co., one crusher, one sander, one clay elevator, one boiler, one engine, pulleys, belting, shafting, etc.; 11000 pallets, 10x36 inches; Racks for 80,000 brick; kiln doors, grate bars, barrows, trucks. Everything necessary for brick yard. Capacity 20,000 brick daily. Only two million brick have been made on this machinery which was bought new. Address, J. S. COLLINS,

Frankfort, Ky.

Establish a Pressed Brick & Tile Plant

IN HOPE, Arkansas, where we have four railroads in daily operation, fifth line building and sixth lately surveyed.

Hope is 93 feet higher than the city of Little Rock; **is highest point on St. Louis main line of the I. M. & S. Ry., in Arkansas**, has a population of 5,303 and is steadily growing. **We have the best of water, mild climate and healthy location.**

A plant making pressed brick and tiling is very much needed here, as now all our first-class building brick and all tiling are shipped here at $16 to $30 per thousand for pressed brick and **five cents per foot for the cheapest 4-inch farm drain tile.**

Large territory to be supplied from here. One mud brick plant here, but **no other clay plant of any nature.**

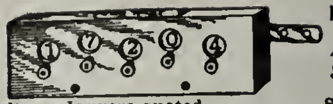
Excellent shale for this business just outside of corporation on prominent railroad. This 40 acres of shale land can be had at the low price of $40 per acre. 160 acres of hardwood timbered land adjoining, insuring cheap fuel at only $30 per acre if taken before June 1st. It is good farm and truck land after timber is cut. This land is so close to town that it **is worth the price without consideration of the valuable shale.** I am drilling (705 feet now) for gas and oil near Hope. Largest gas field in United States is only about 60 miles from Hope—wild burning wells. Come and see; also take chances in my developments, but act at once, as I am drilling every day.

Good practical brick makers have already made pressed brick from this shale and would, if you wish, invest a few thousand dollars in the plant.

Come and go over the proposition when I feel confident that you will be more than pleased with the outlook, and will, no doubt, wonder why such a plant has not long since been located here.

I have samples of brick to show test of shale, and you are invited to personally examine and test it yourself. Address, A. P. DYKE,

Factory Locations and Land Broker, Hope, Arkansas



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Sold by all dealers.

Paper Joggers quoted.
R. A. HART. 41 White St., BATTLE CREEK, MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machine; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments W. L. JONES,

Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana,"
Care Clay Record, Chicago, Ill.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 180 H. P. Heine Boiler
Two Freight Elevators
The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,

Nebraska City, Neb

WANTED

A position as manager, sales manager or superintendent by a young man with fourteen years practical experience in the brick business in all its details from clay pit to scaffold; together with a thorough knowledge in the most up-to-date methods in use in the various plants throughout the country. A-1 references.

Address N. Y.
Care of Clay Record, Chicago.

FOR SALE

A good stiff, mud brick plant near Syracuse, N. Y. Clay burns a nice red, suitable for face or common brick. Good market. Ship by water or rail. A bargain. Address 1702 MIDLAND AVE.,

Syracuse N. Y.

WANTED

One second-hand medium size steam shovel for handling clay or sand.

Address E. J. KELLER,
Lexington, Okla.

FOR SALE

Vol. 1 of Sager's Collected Works. Book is in splendid condition. Price only $5. Answer at once.

Book, care of Clay Record,
Chicago

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS - Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY
1413-G Street, N. W.
ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

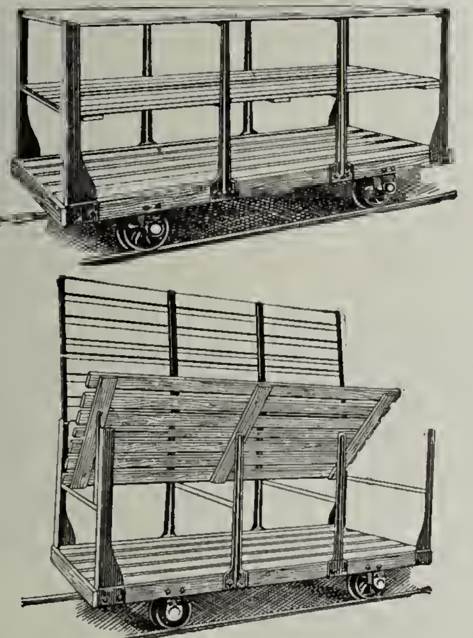
Yours very truly,
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company we can do for You We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

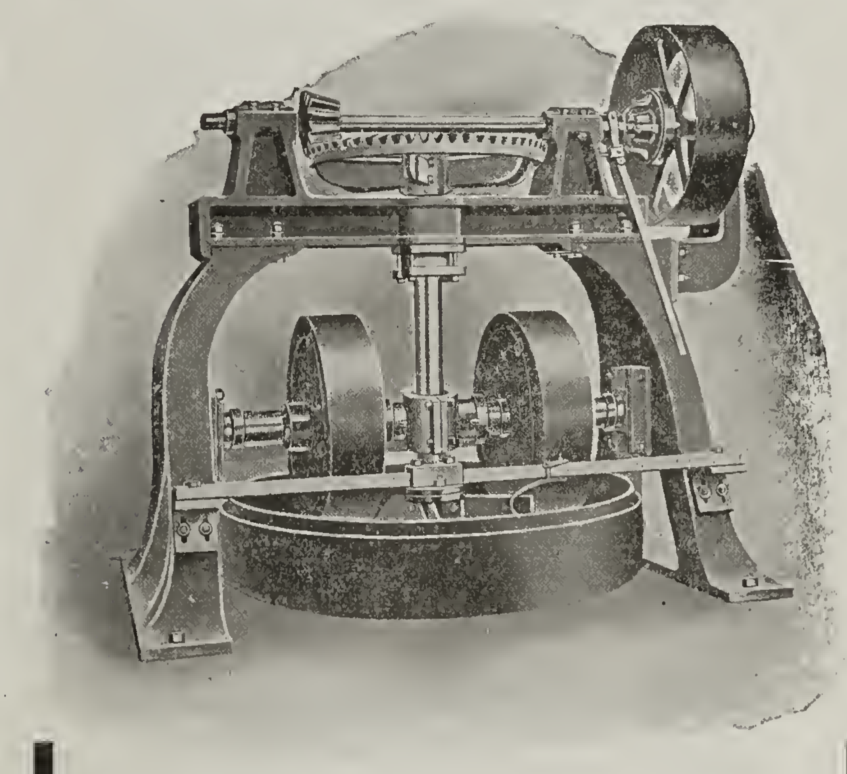
THE KING ENGINEERING COMPANY
RICHMOND, VA.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA



PHILLIPS & McLAREN CO. PITTSBURG, PA.

BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

When writing for prices state kind of material and capacity required.

Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

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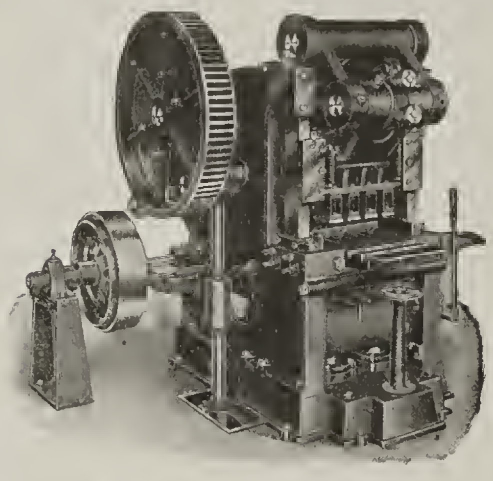
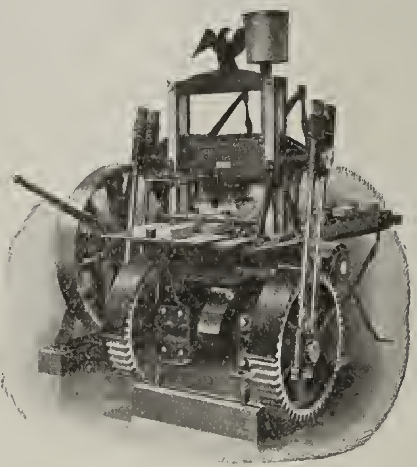
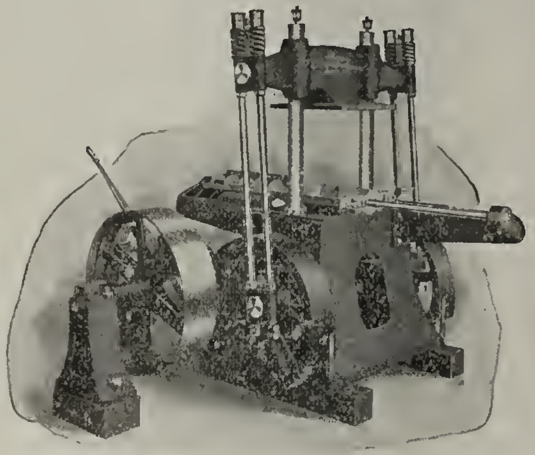


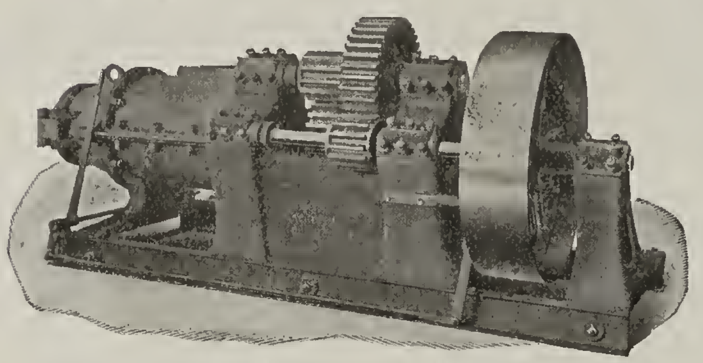
Model "B" Dry Press



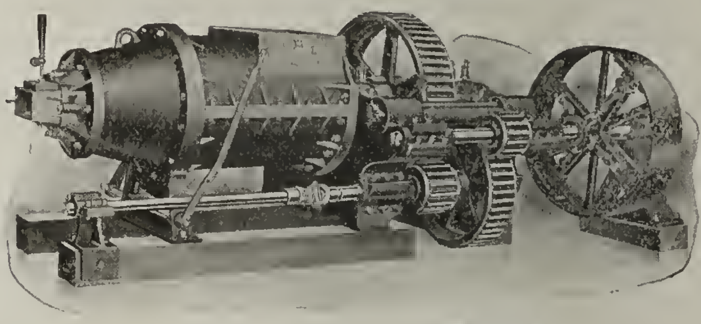
Eagle Repress



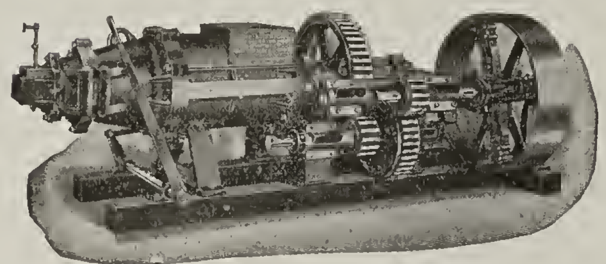
Roofing Tile Press



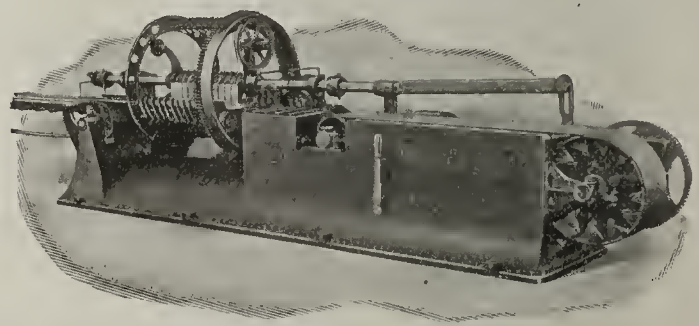
No. 165 Auger Brick Machine



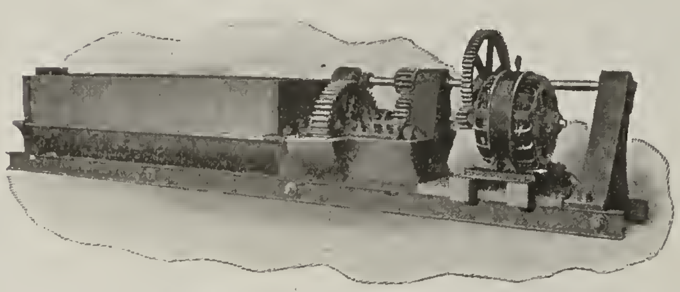
Special Giant Brick Machine



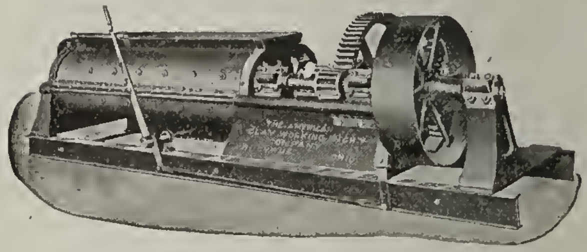
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



No. 51 Electrical Driven Pug Mill



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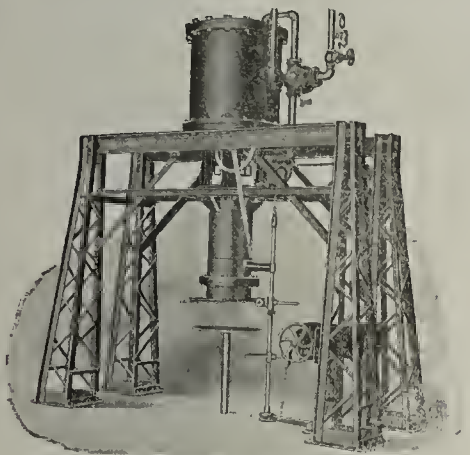
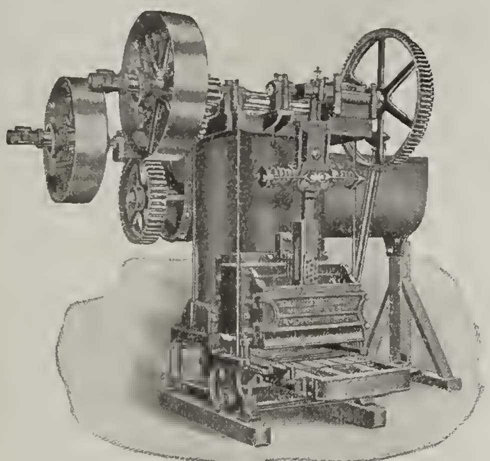
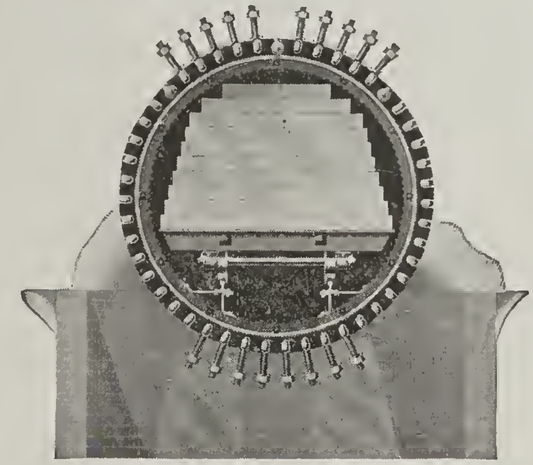
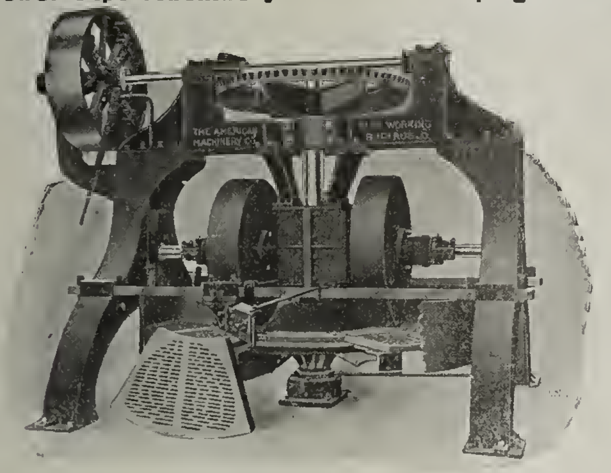
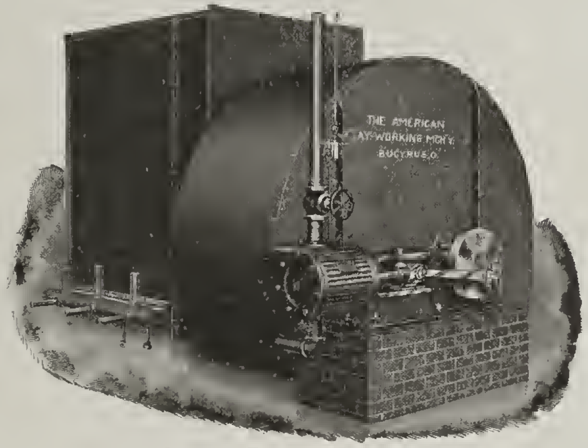

Sewer Pipe Machinery

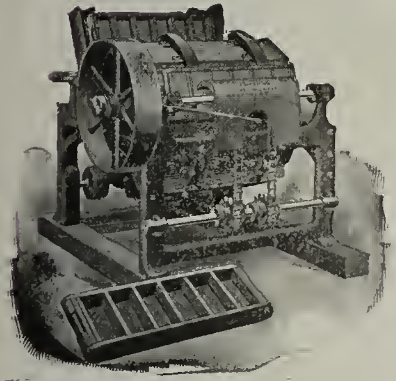

Upright Stock Brick Machine

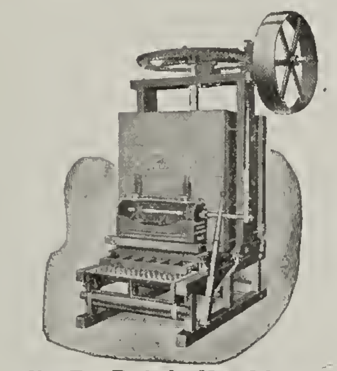

Sand-Lime Brick Machinery

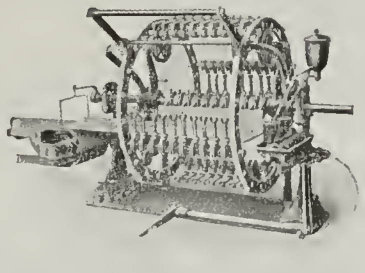

9 Foot Dry Pan



Blower Dryer Apparatus

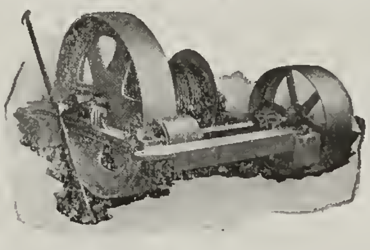

Mold Sander


H. P. Brick Machine


No. 62 Hand Power Cutter

Dry Cars

Disintegrators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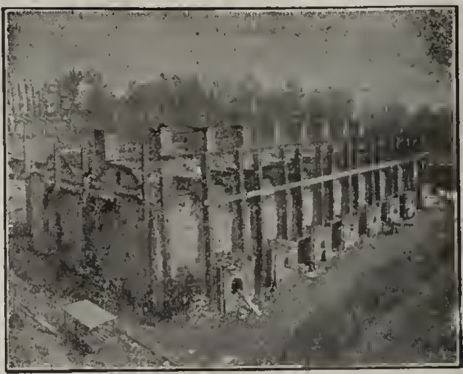

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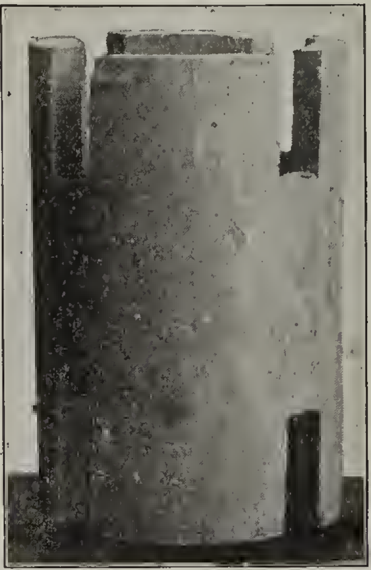

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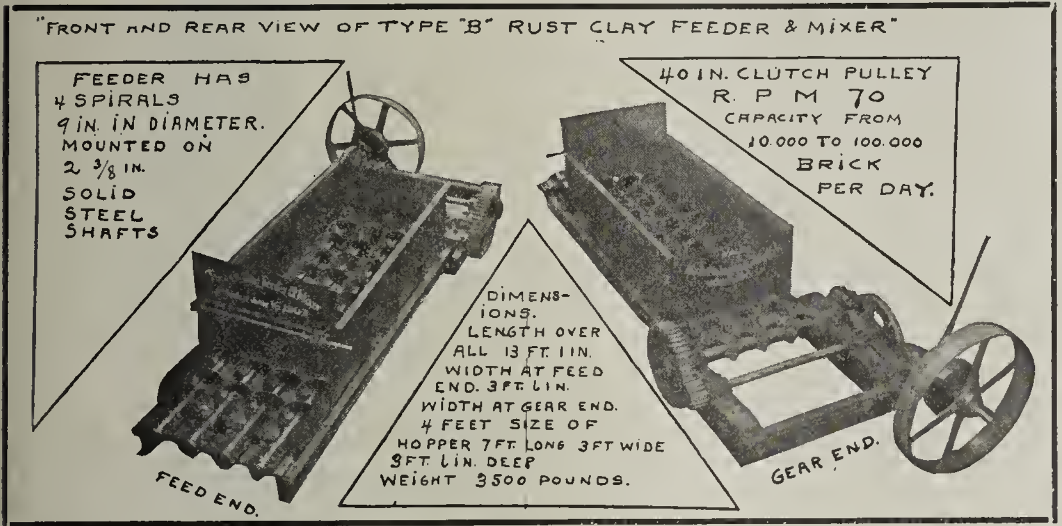
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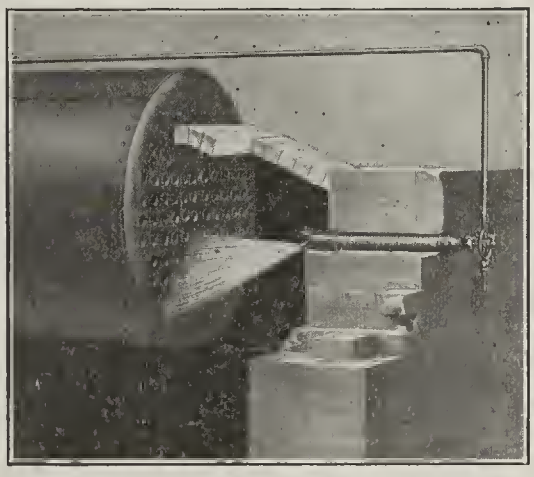

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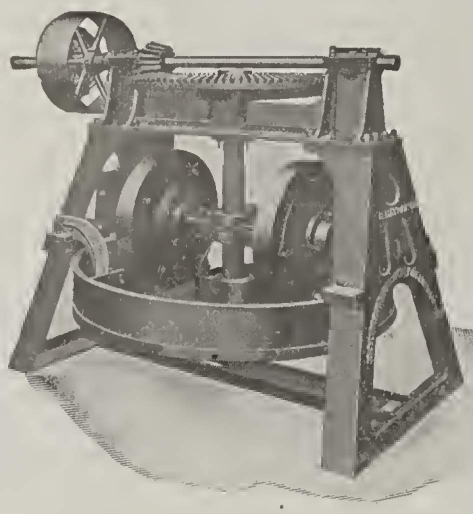

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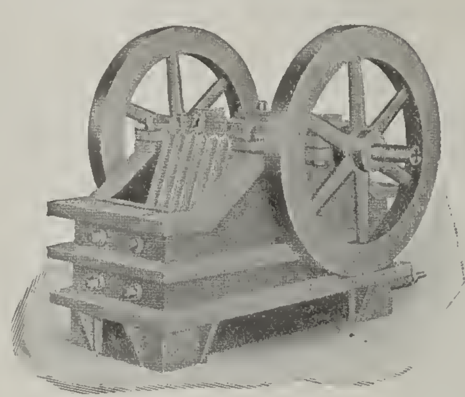

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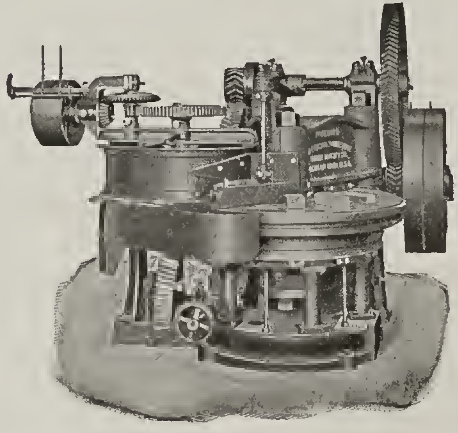

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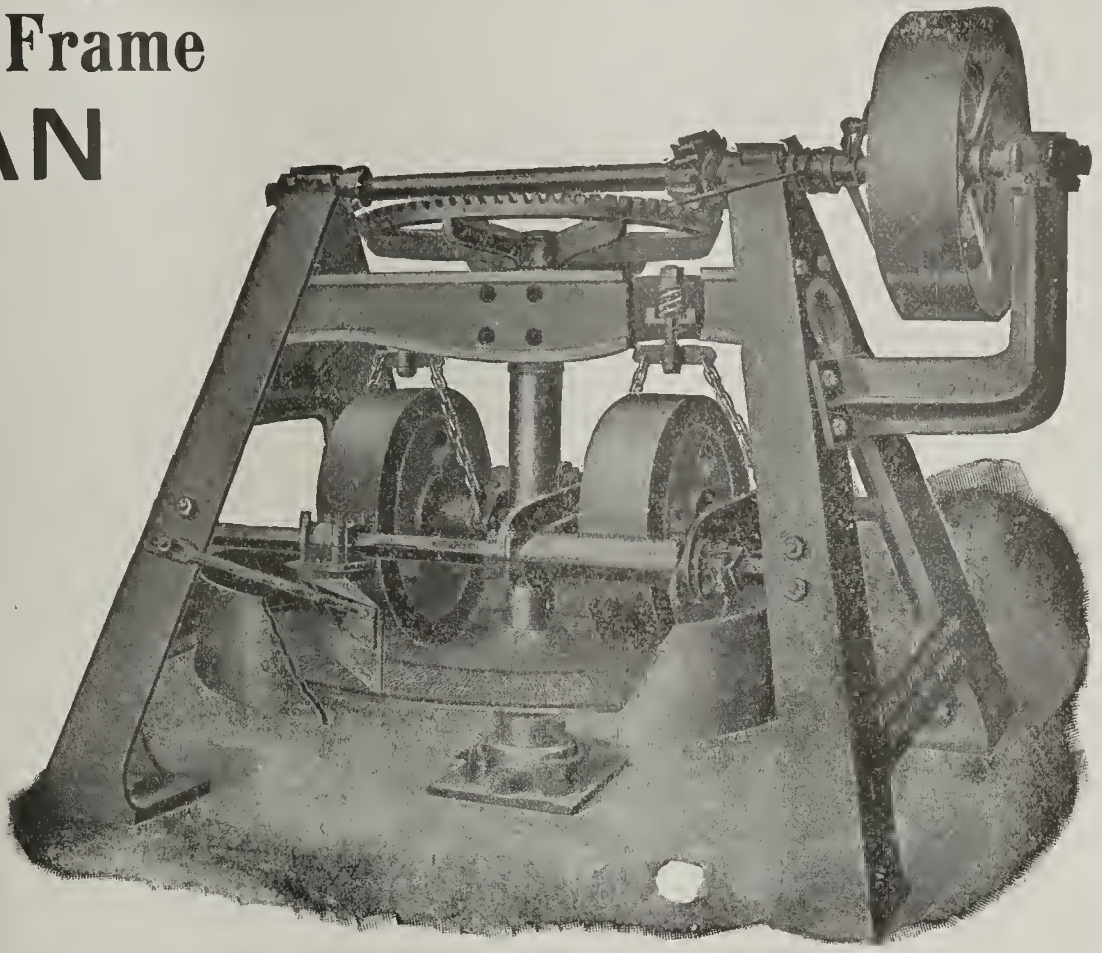

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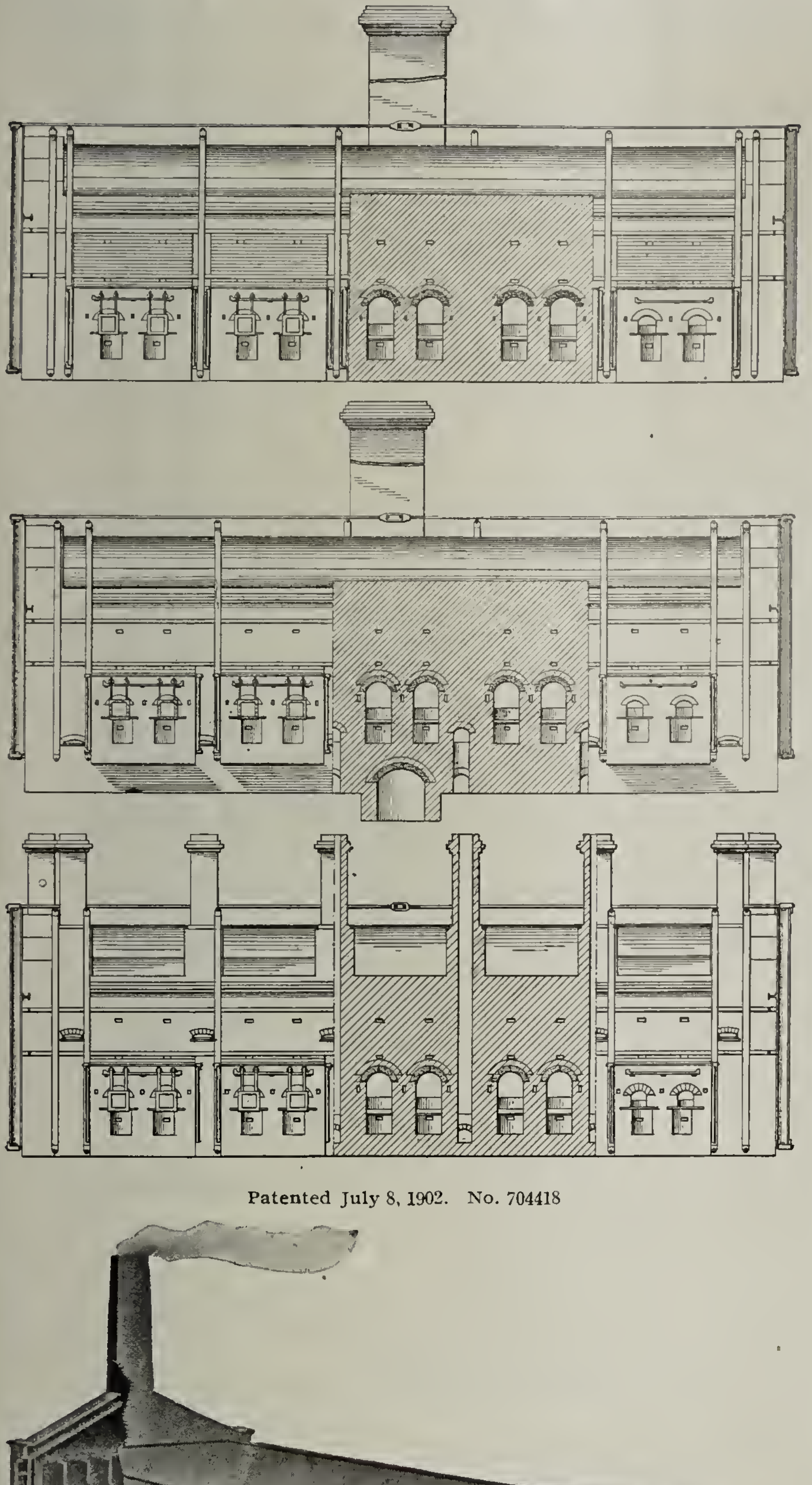
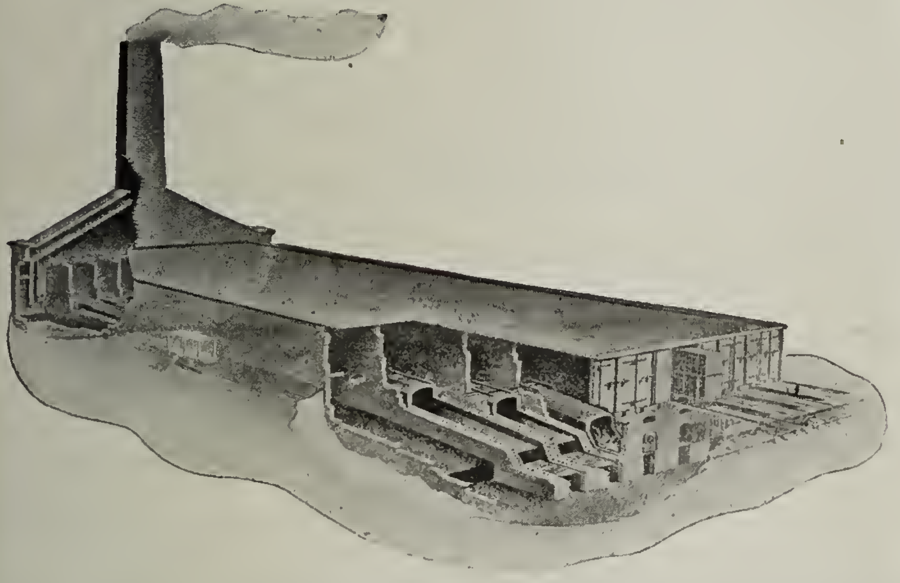


Patented July 8, 1902. No. 704418



Patented March 3, 1903. No. 721988

THOMAS M. WILSON

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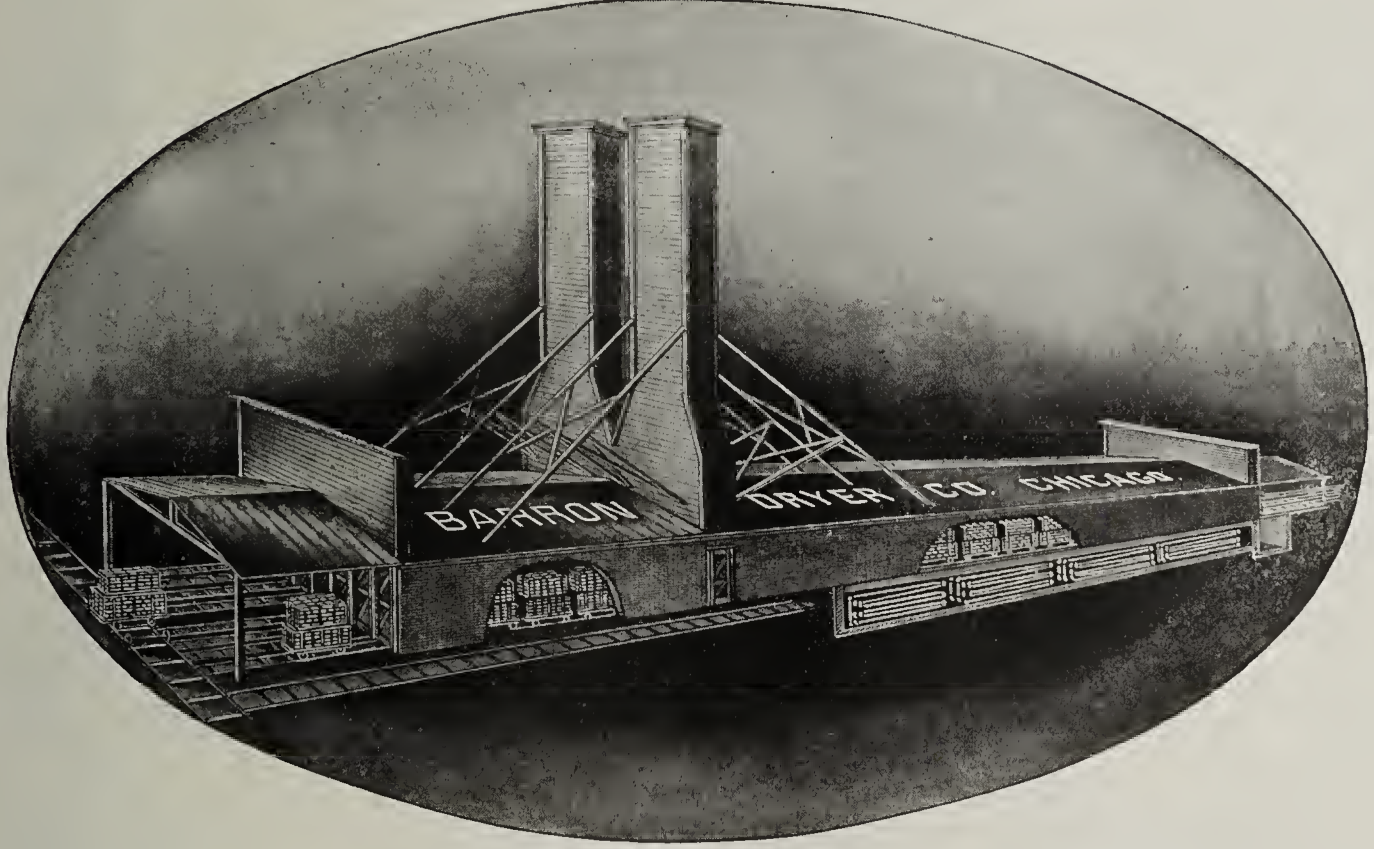

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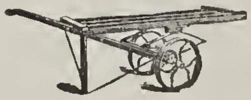
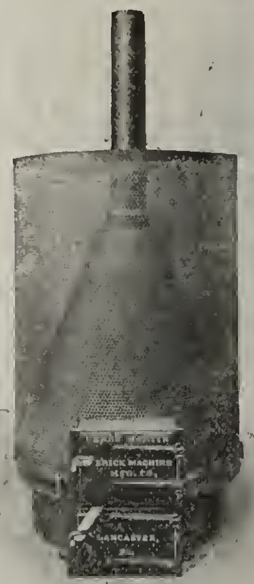
IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY, DURABILITY AND COMPLETE SATISFACTION THROUGHOUT

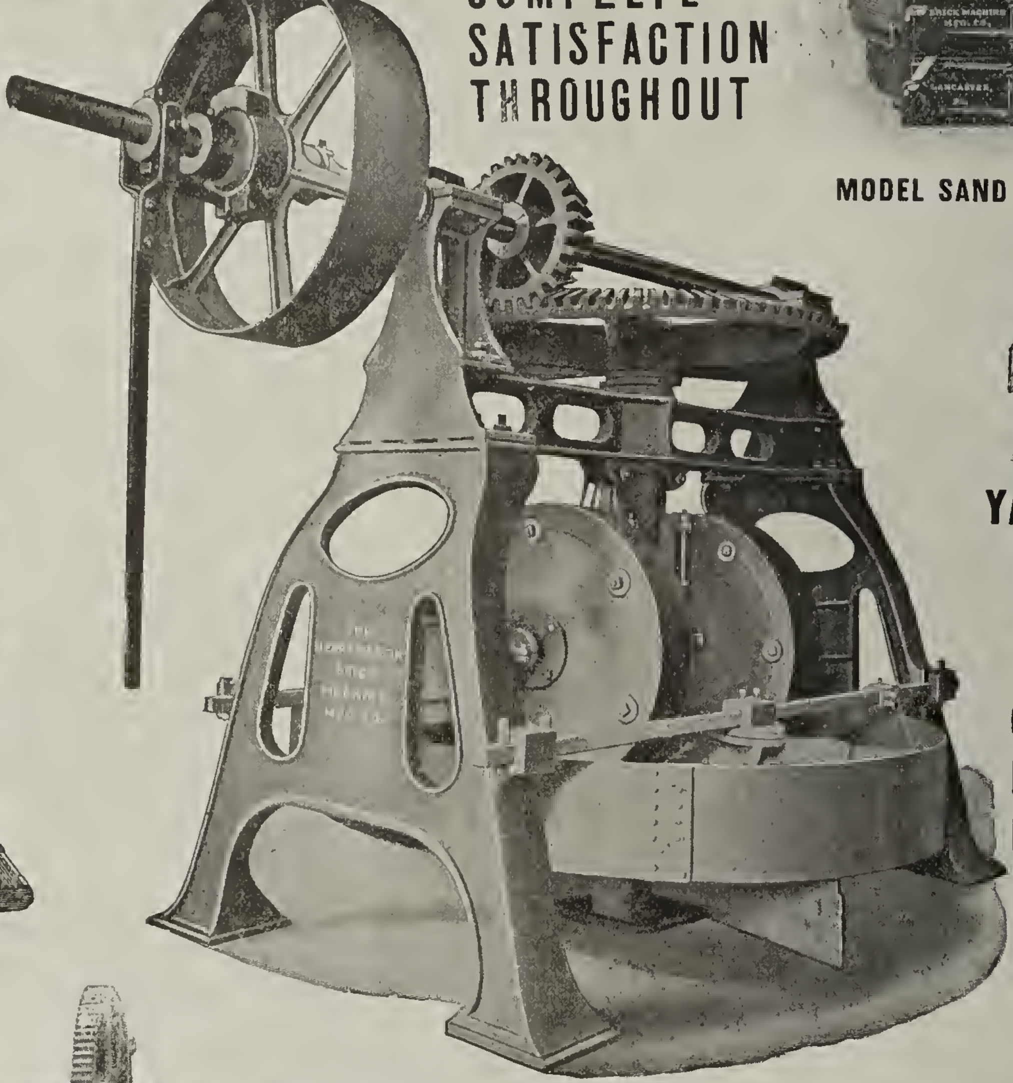
DRYER CARS

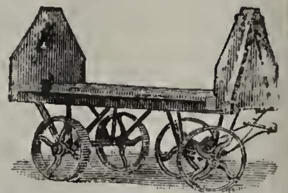

TRUCKS

HORSE POWER MACHINE

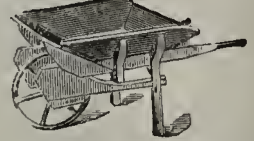

MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY





YARD SUPPLIES



OF ALL KINDS BUILT RIGHT

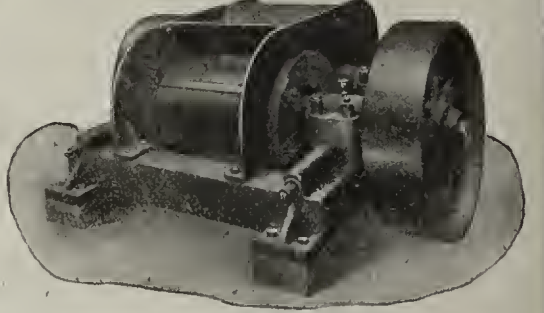
TRUCKS

BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET.

WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.

STYLE "P" BRICK MACHINE

"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"


STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

PATENTED

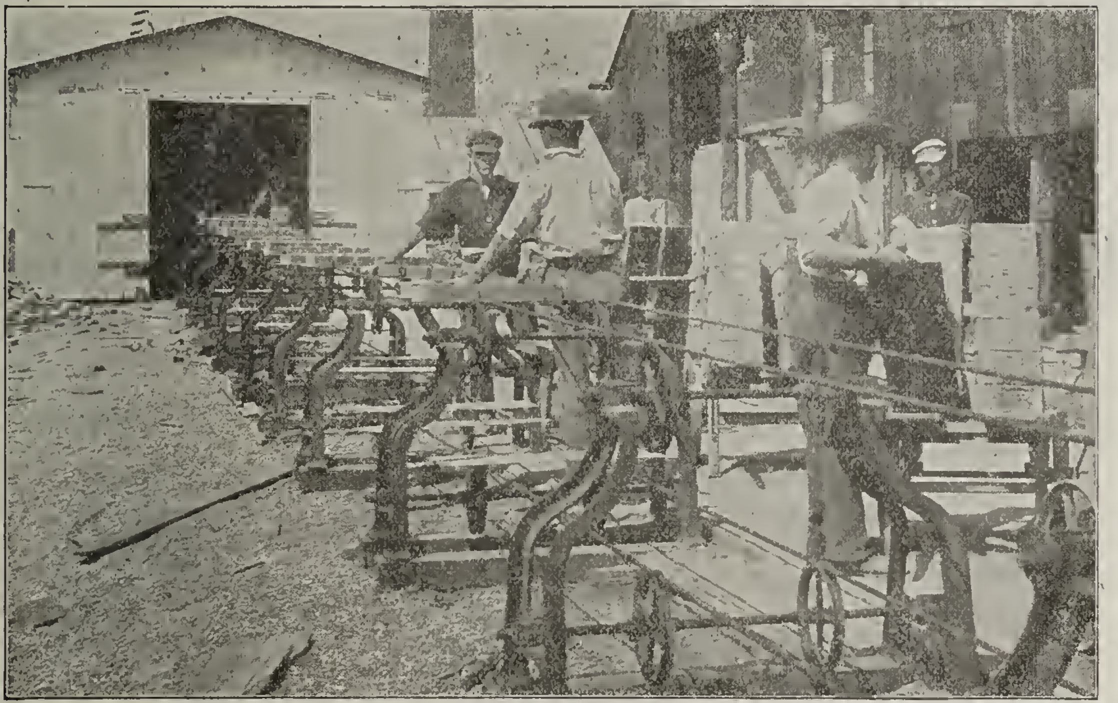
February, 22d, 1898, No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞

☜ LABOR SAVING THROUGHOUT ☜



From "Martin Patent System" Brick Dryer to Kilns

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

THE HENRY MARTIN BRICK MACHINE MFG. CO., Inc.

LANCASTER, PA., U. S. A.

HANDLE YOUR CLAY WITH ONE MAN AND **The Thew Steam Shovels**

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 0 Shovel—Ohio Brick Co., Toledo, O.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Ouly One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

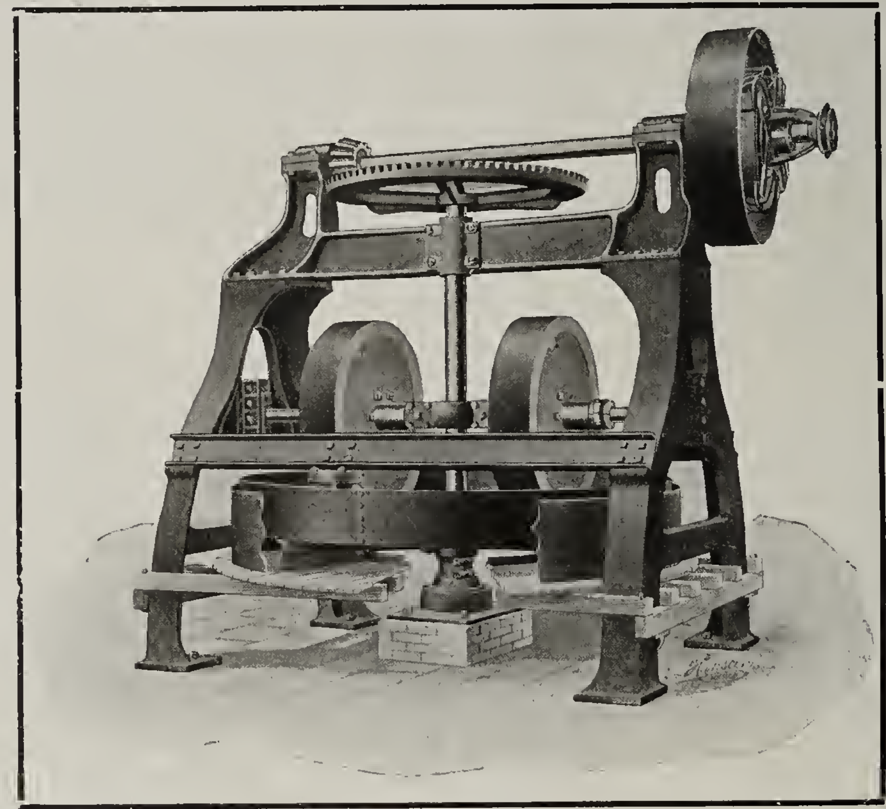
Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

Write us for Catalogues and Information.

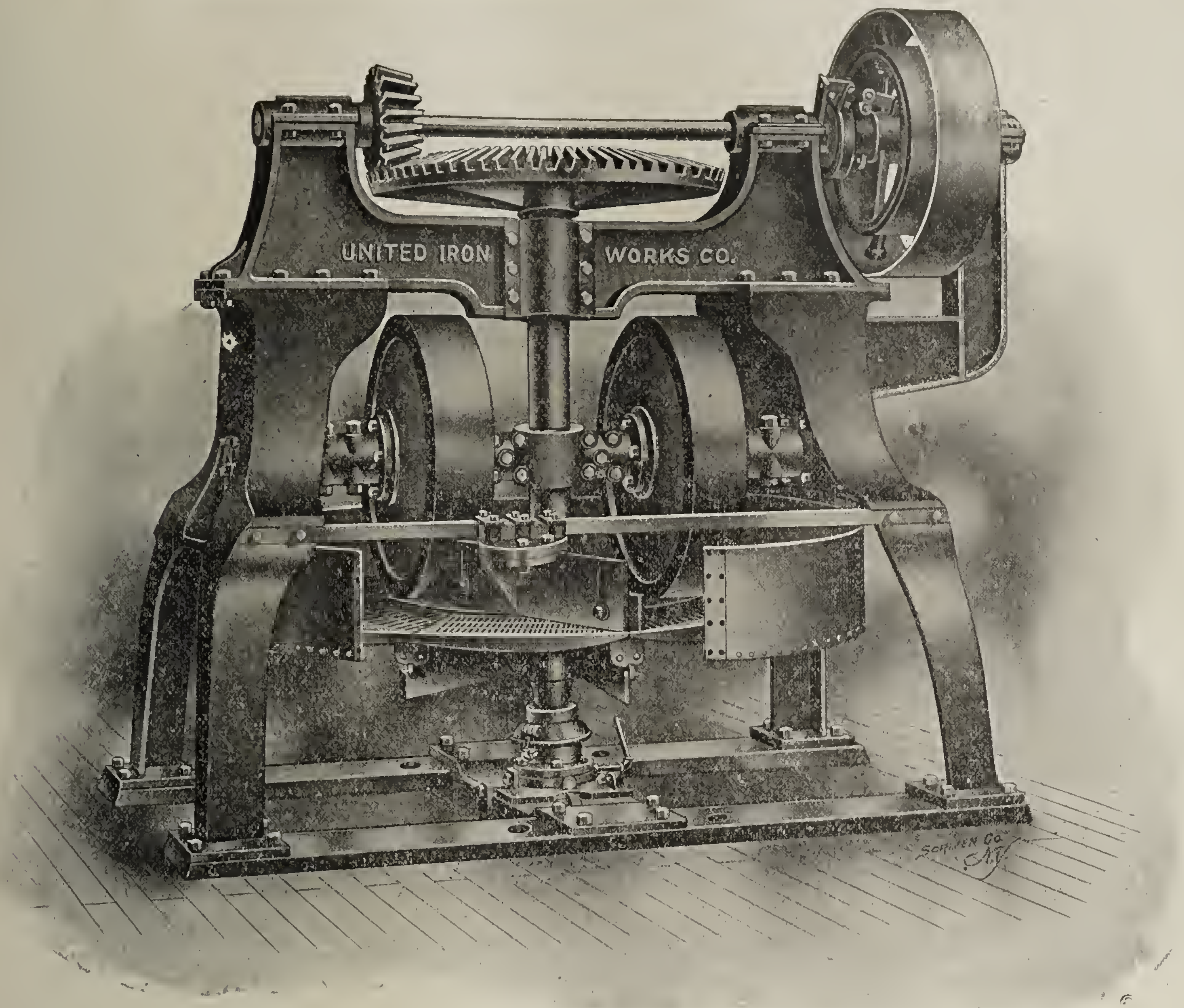
THE THEW AUTOMATIC SHOVEL CO.
LORAIN, OHIO

Wet Pans



Dry Pans

The TURNER VAUGHN & TAYLOR CO.
Cuyahoga Falls, Ohio, U. S. A.


UNITED IRON WORKS CO.
SCRIVEN CO. N.Y.

Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,

WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

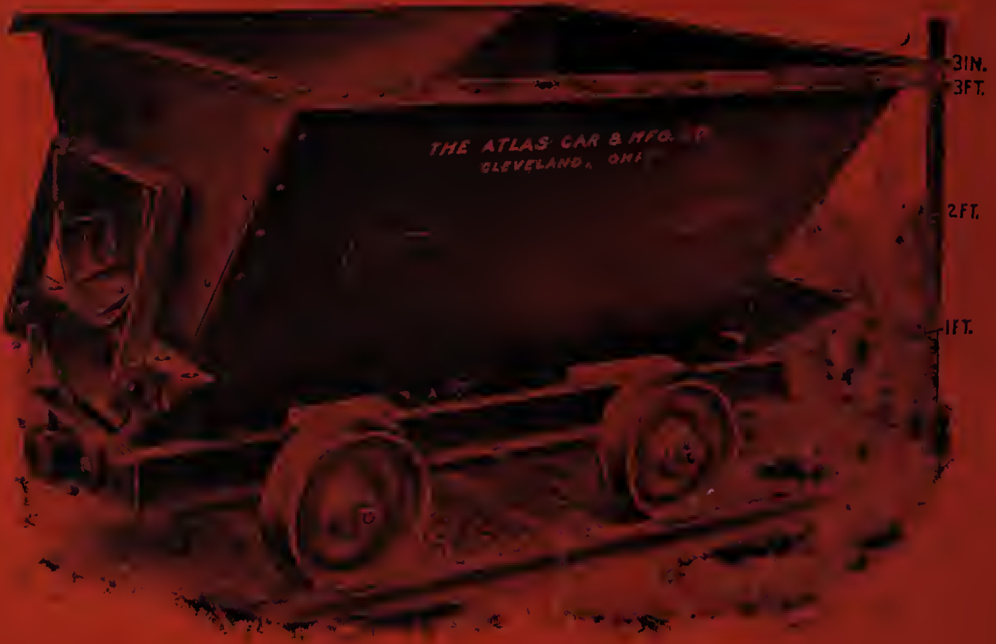
SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
CHERRYVALE, KAS.; KANSAS CITY, MO.

No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.



NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.

CLEVELAND, OHIO

Vol. 34 No. 10

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
· PERTAINING ·
— TO THE —
CLAY · —
— · INDUSTRY ·

May 29, 1909

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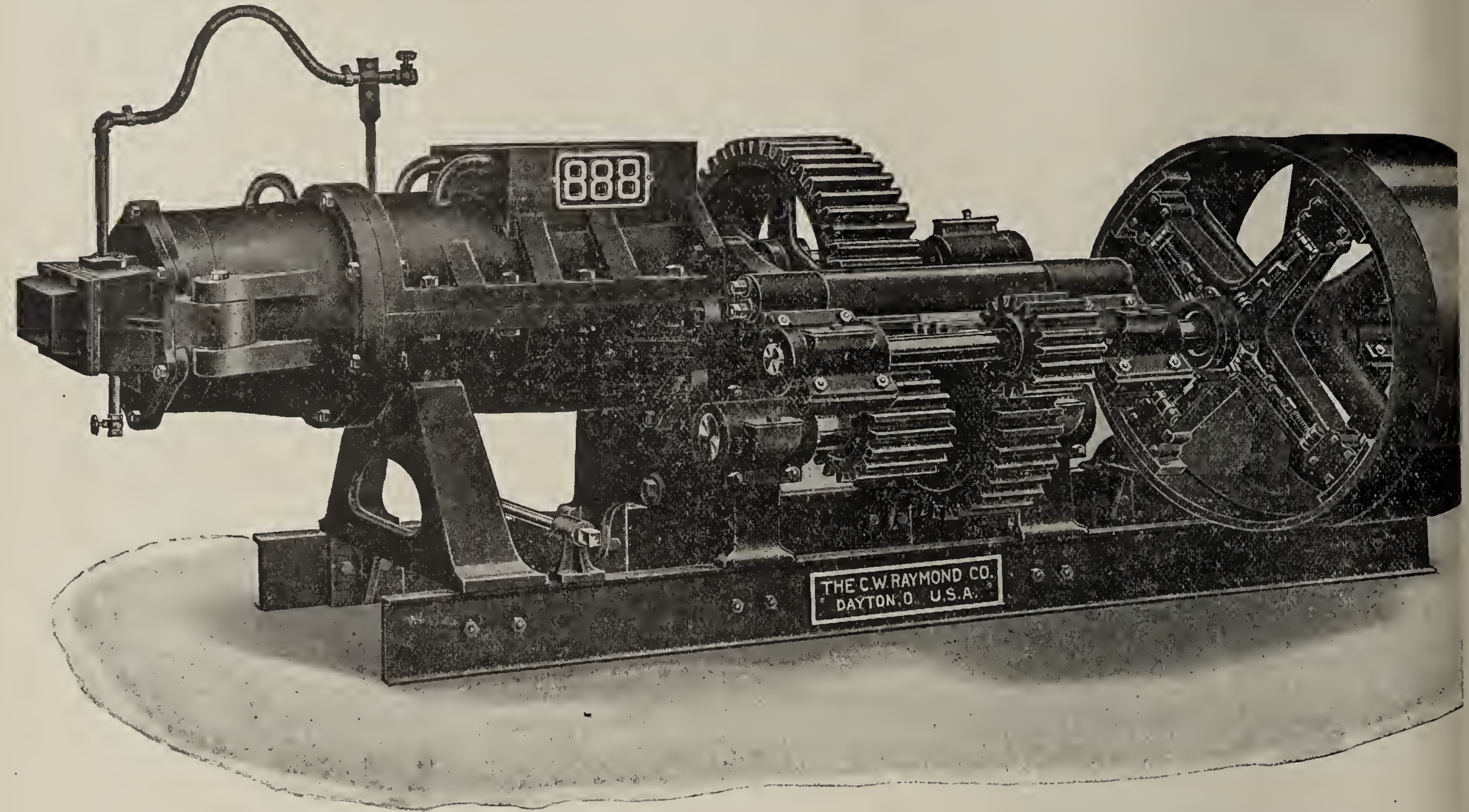
DEMONSTRATED FIRST



The numerous novel features expressed in the construction of the "888" Brick Machine make it an ideal one. Not only the latest, but nearer perfection than has ever yet been attained in auger machine construction. Special features, such as the reduction of lamination, ease of operation, everlasting strength, minimum of horse power, and many other conveniences appear in it.

Claims made in its design have been thoroughly tried out under actual working conditions, in five widely divergent plants, manufacturing various products and operating entirely different materials.

Merely the request will bring you a copy of our Exhibit No. 2101, which will explain these thoroughly demonstrated claims.

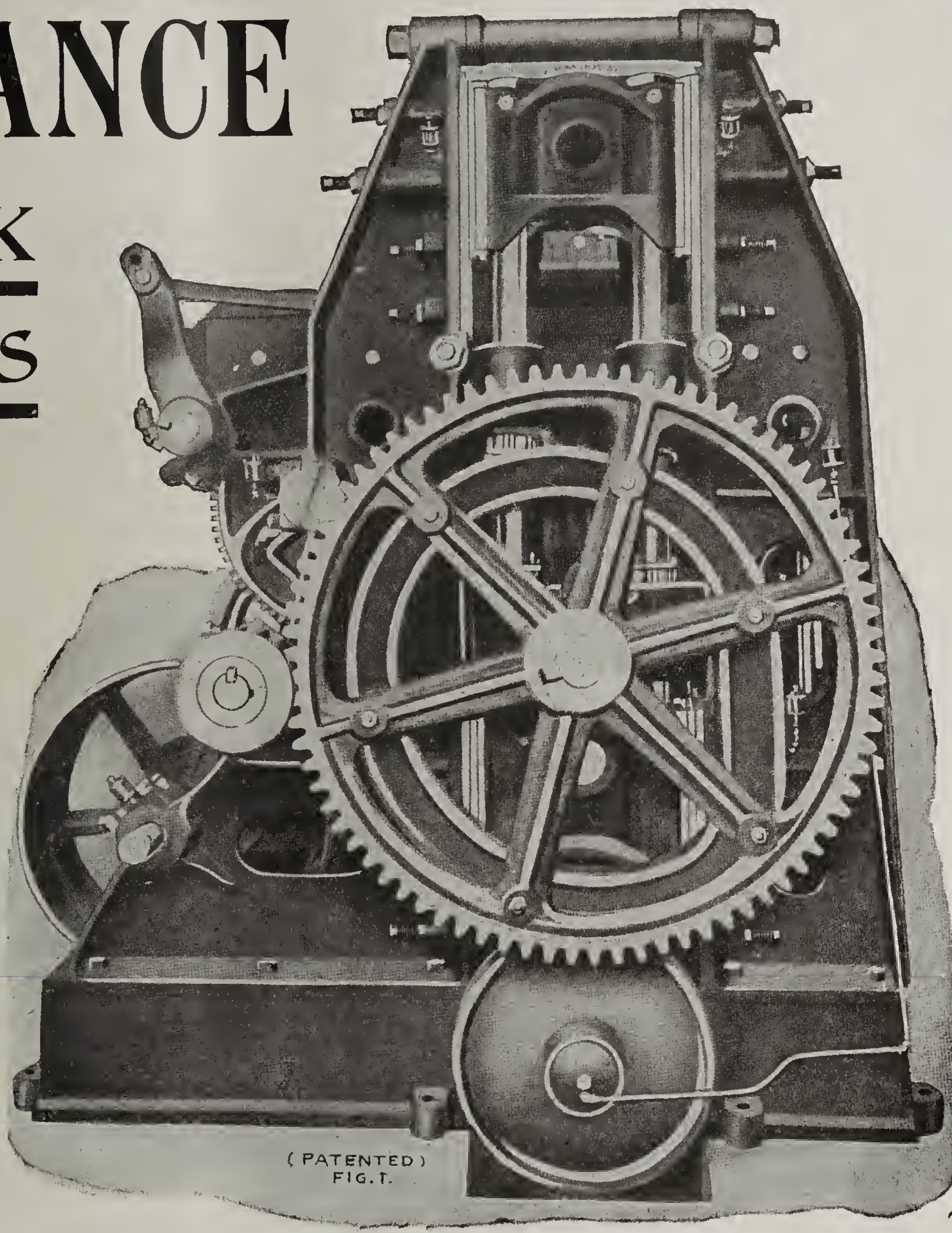
THE C. W. RAYMOND COMPANY

The Strongest Single Power in the World of Clay Working Machinery

DAYTON, OHIO, U. S. A.

RELIANCE

BRICK PRESS



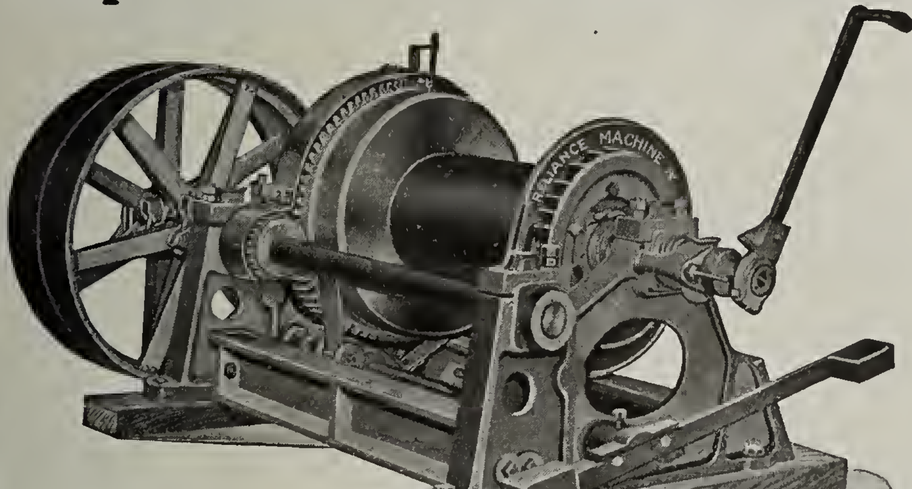
(PATENTED)
FIG. I.

The Only
Machine Making
Brick Without
Granulated Centers

No Toggles
Powerful
Simple

We Design and Equip
Dry Press Brick
Plants Complete

Improved Reliance Friction Drum Hoist



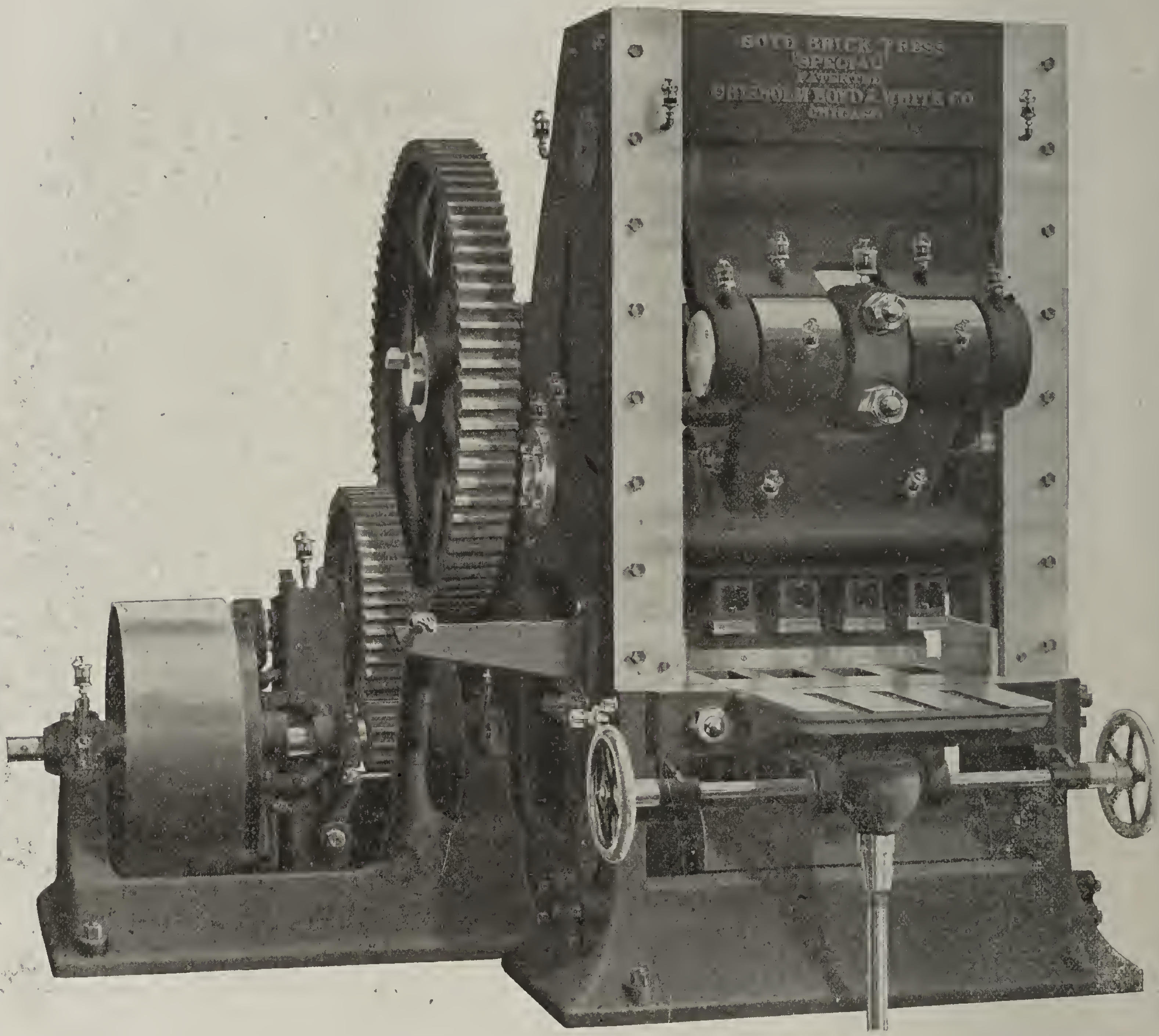
STEAM OR BELT DRIVEN

Specially Adapted to
Service in Clay Plants

RELIANCE MACHINE and
TOOL WORKS, St. Louis, Mo.

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

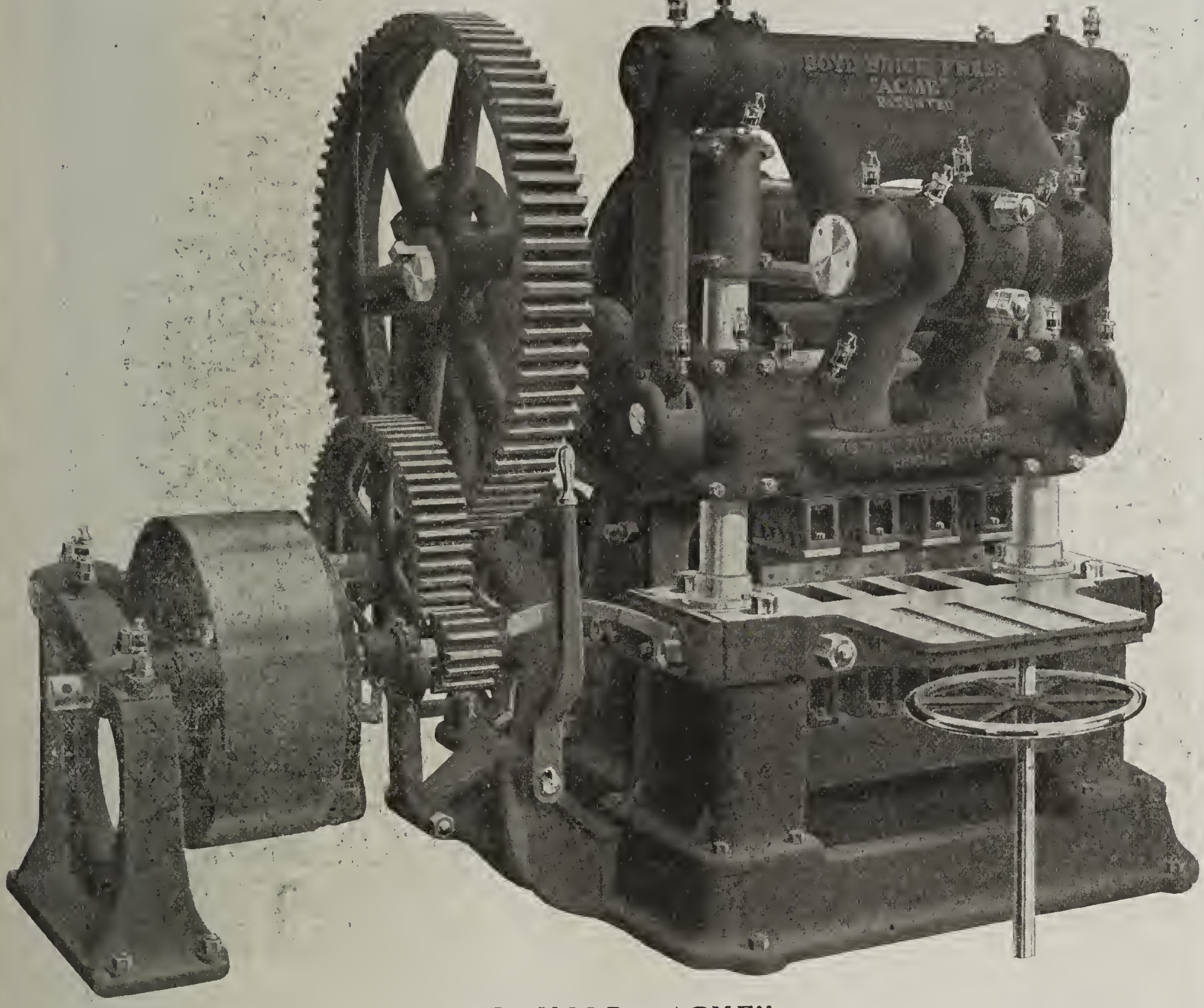
BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company
Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

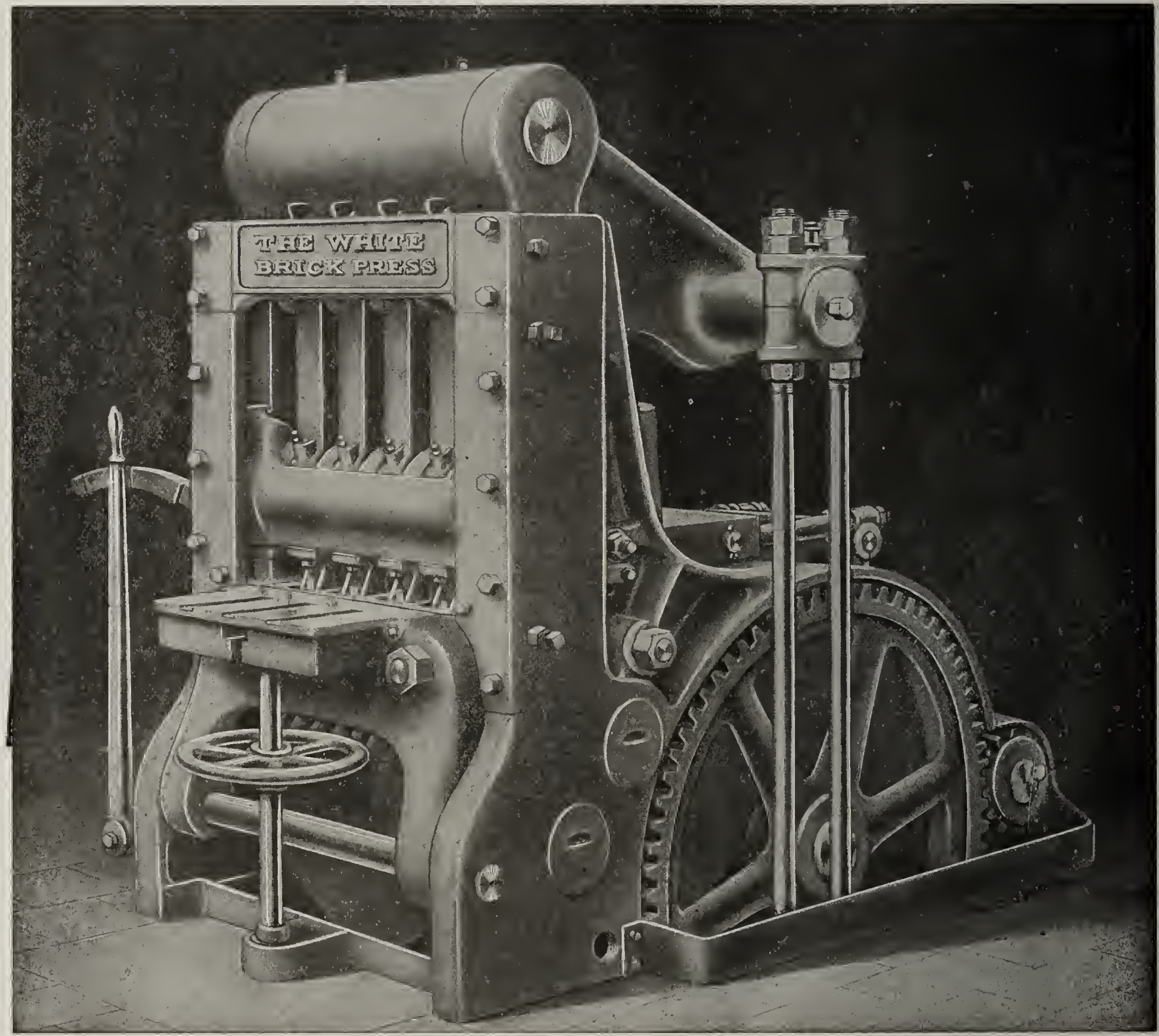
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS **CHICAGO, ILLINOIS**

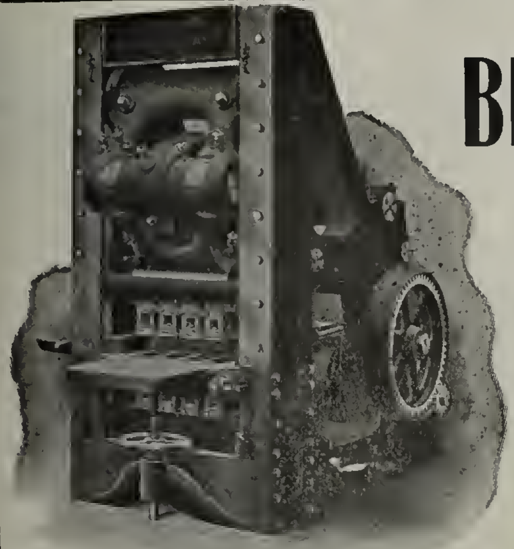
ALWAYS ON THE JOB
THE WHITE BRICK PRESS



When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

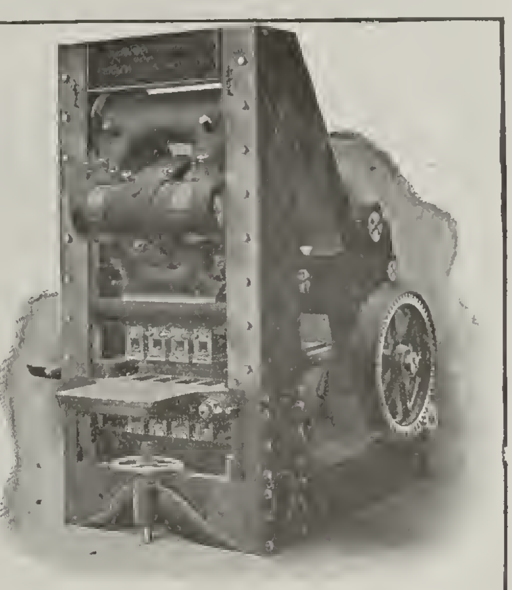
SEND FOR CATALOGUE

CHICAGO BRICK MACHINERY CO.
1308 GREAT NORTHERN BUILDING, CHICAGO



BERG BRICK PRESS

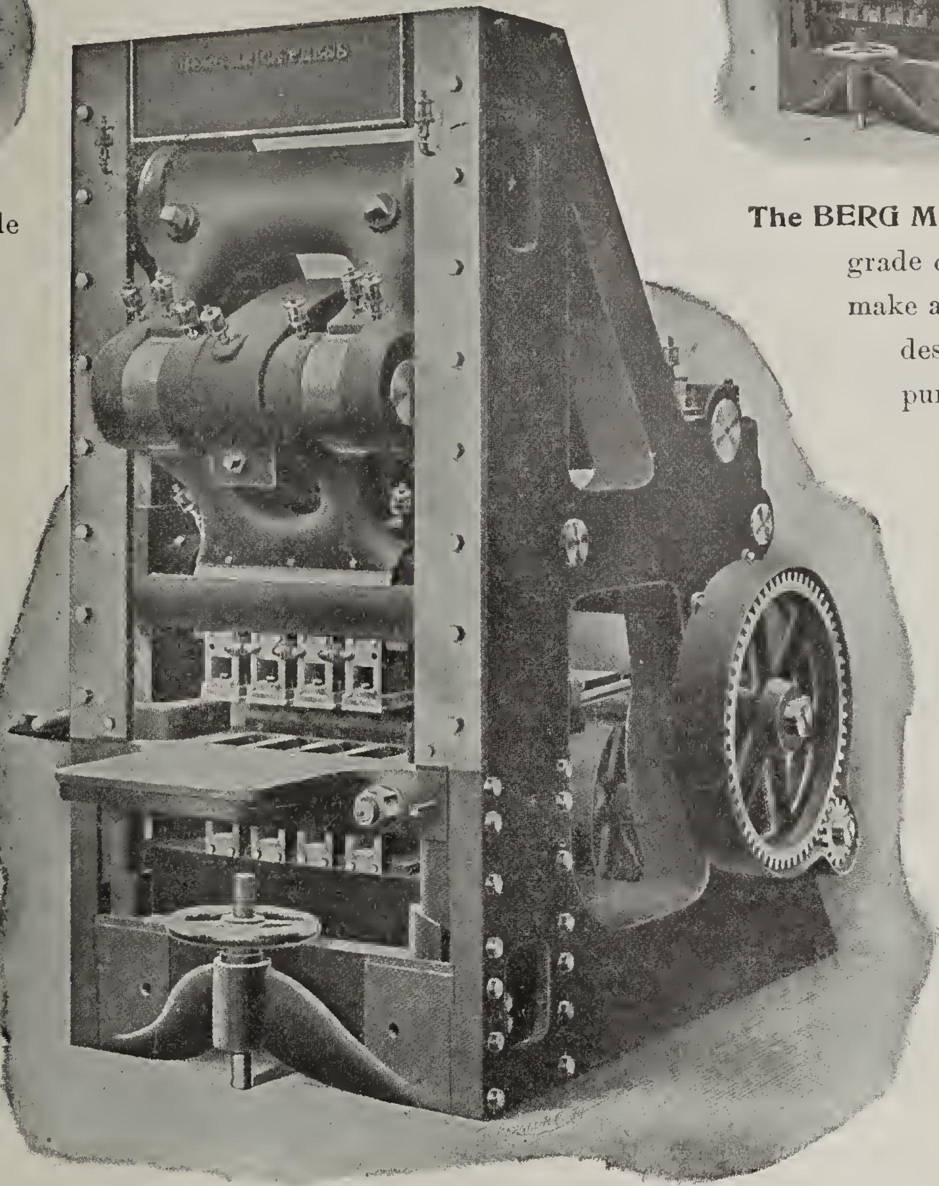
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.



The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.



The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

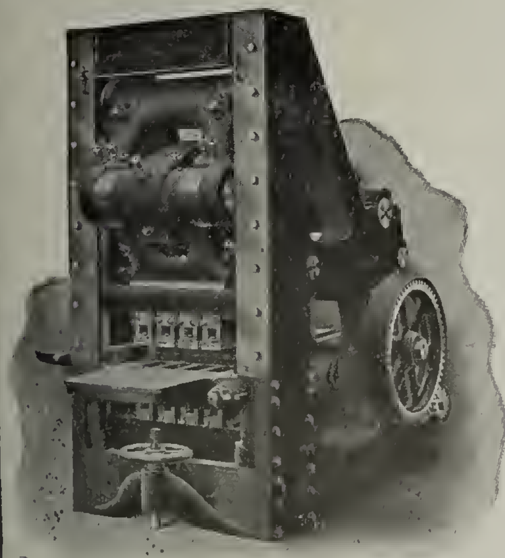
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

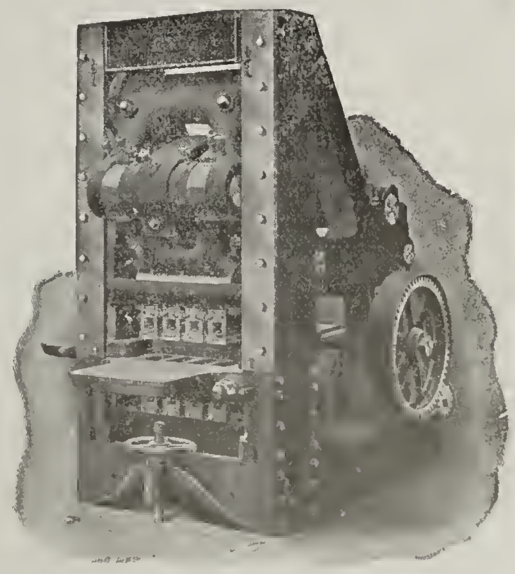
The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, exclusively. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address

A. BERG & SONS
OFFICE: MANNING CHAMBERS
TORONTO, ONT., CANADA





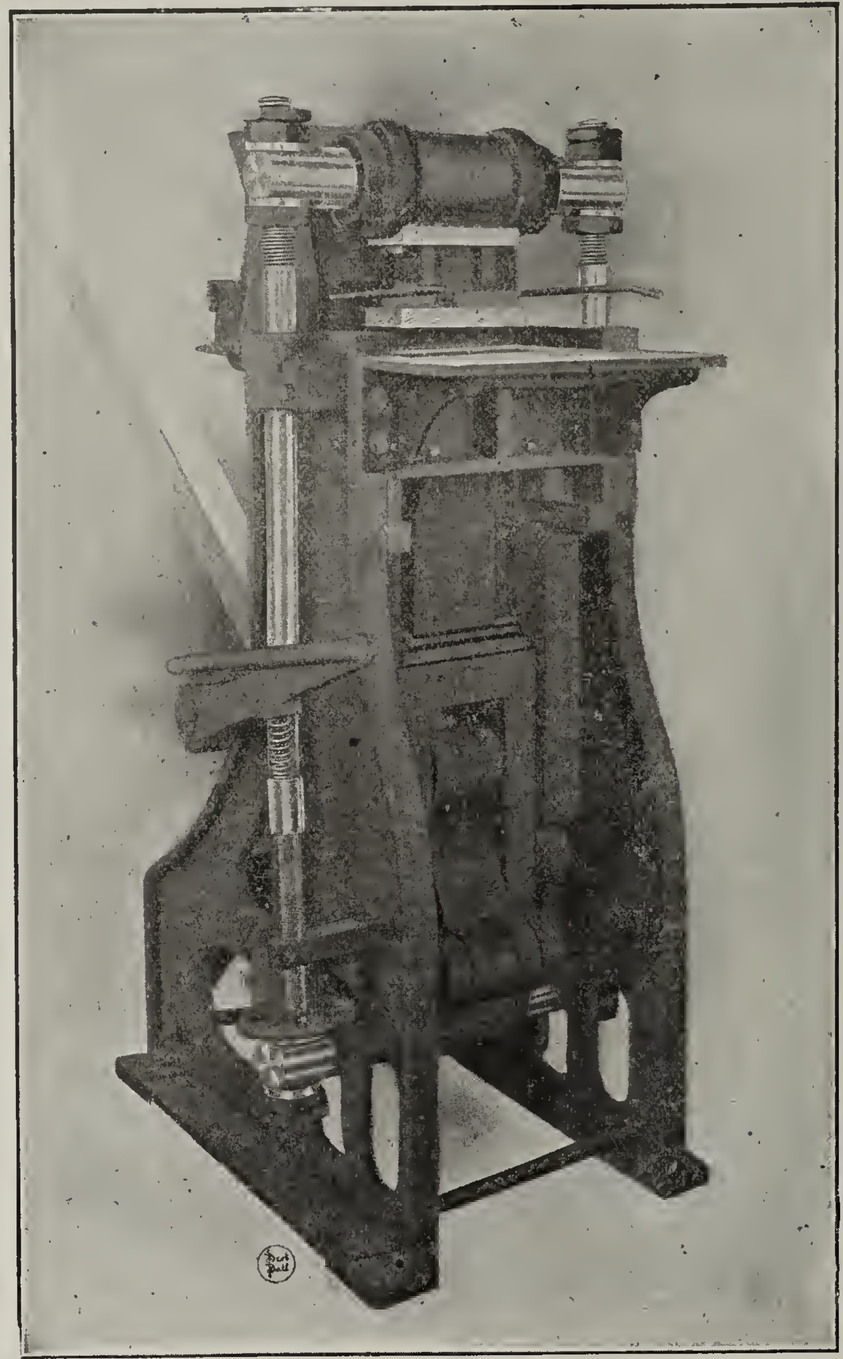
The Fernholtz Brick Machinery Co.

MANUFACTURERS OF

DRY PRESSES, PULVERIZERS, MIXERS, ETC.

FOR
CLAY
AND
SHALE
BRICKS

FOR
CEMENT
AND
SAND-LIME
BRICKS



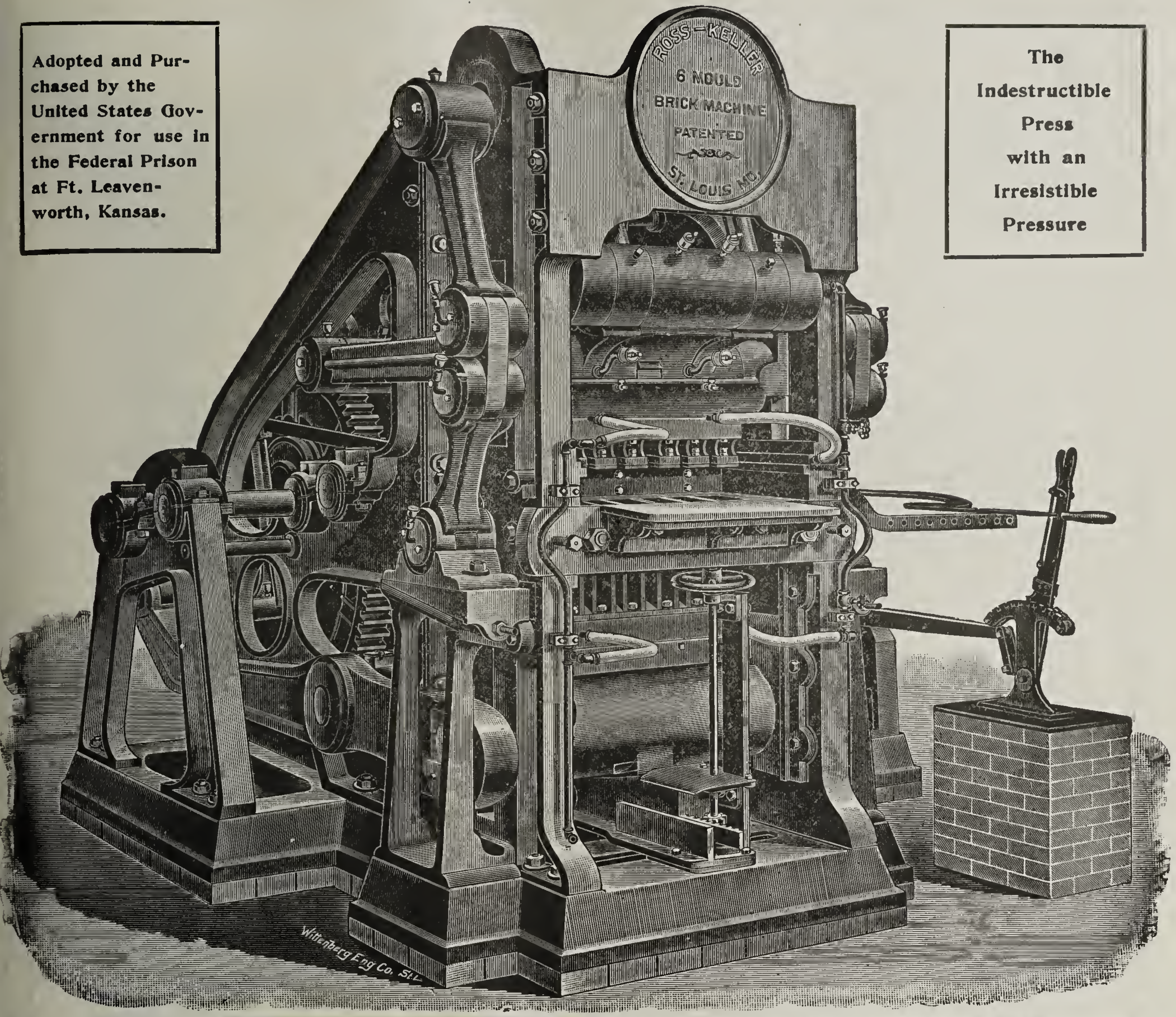
This Hand Press makes Brick equal in density to those made on a power press. Every Brick *PERFECT.* Extensively used for ornamental and special design.

The Fernholtz Brick Machinery Co.

BOYLE AND OLD MENCHESTER, ST. LOUIS, MO.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The Indestructible Press with an Irresistible Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

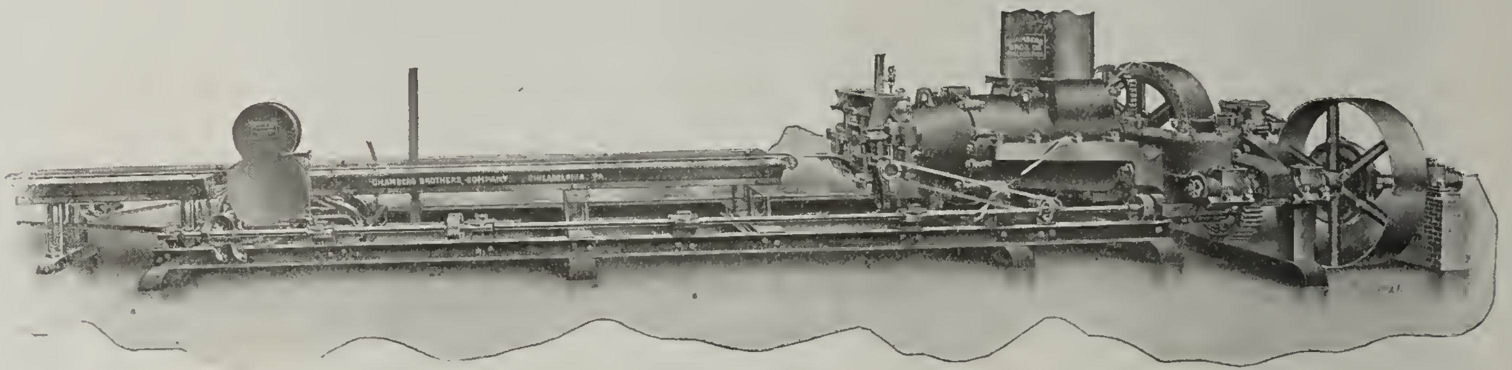
Ross-Keller Triple Pressure Brick Press

The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - ST. LOUIS, MO.

Chambers Brick Machinery



Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

Manufacturers of

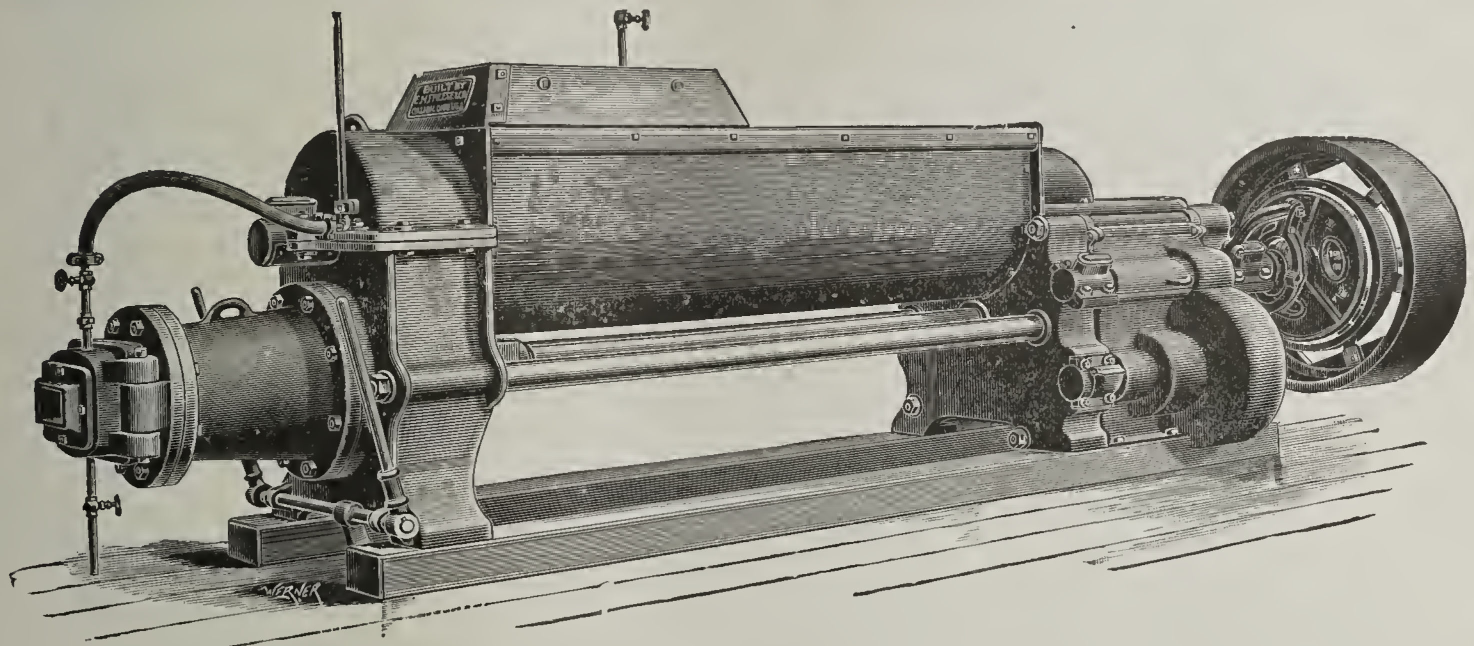
THE KEYSTONE DOUBLE DISINTEGRATORS

For Grinding Tough Clays in which Small Stones may be Imbedded

Chambers Brothers Company

Philadelphia, Pa. Chicago, Ill.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

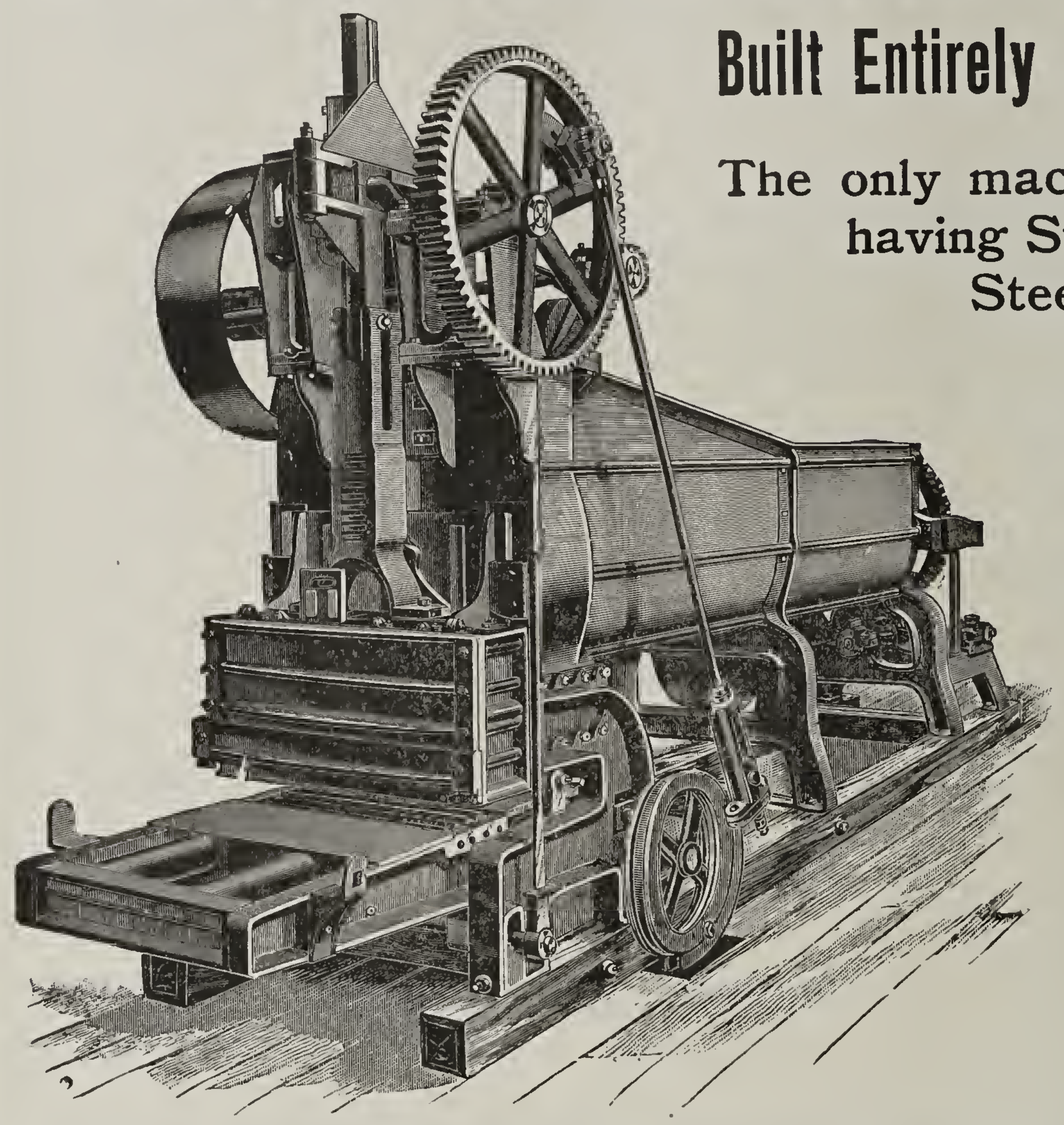
State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

THE POTTS

HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

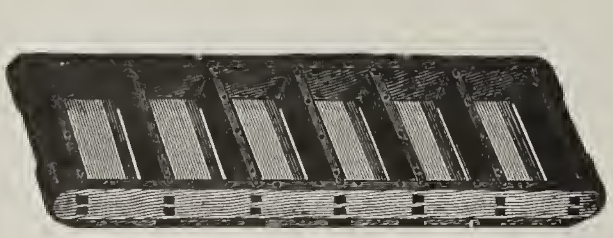
The only machine of this class having Steel Gear and Steel Shaft.

Built of the Best Material by the Best Workmen.

Simple, Strong and Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

Compound Disintegrators and Crushers

As Manufactured by Potts

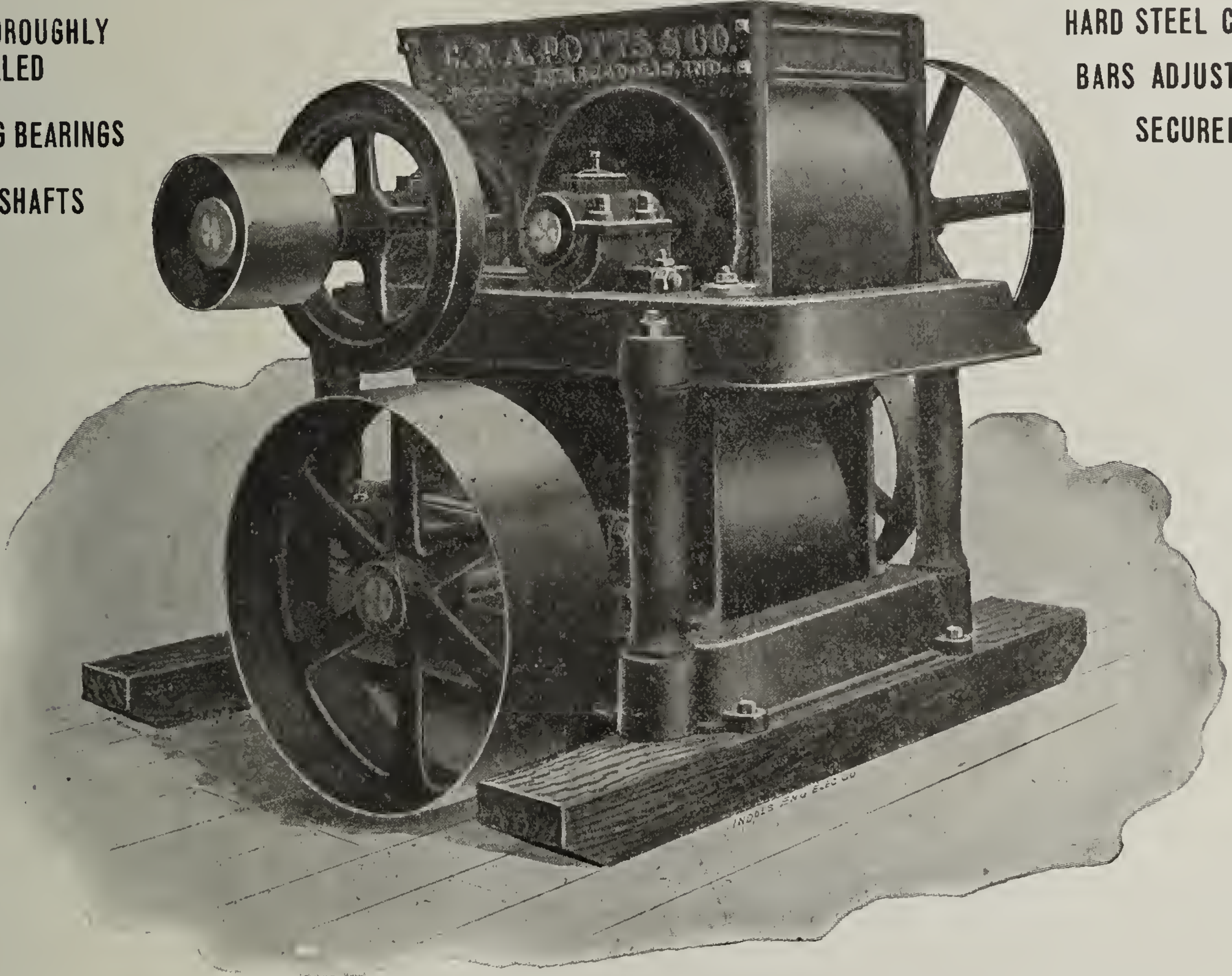
Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

ROLLS THOROUGHLY CHILLED

RING OILING BEARINGS

STEEL SHAFTS

HARD STEEL CUTTING BARS ADJUSTABLY SECURED



Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank. Will not choke or clog from hard, dry or wet, sticky clays. The MOST GENERALLY USED Machine on the market.

Built to Do the Work

Manufactured by

C. & A. POTTS & COMPANY

INDIANAPOLIS, IND.

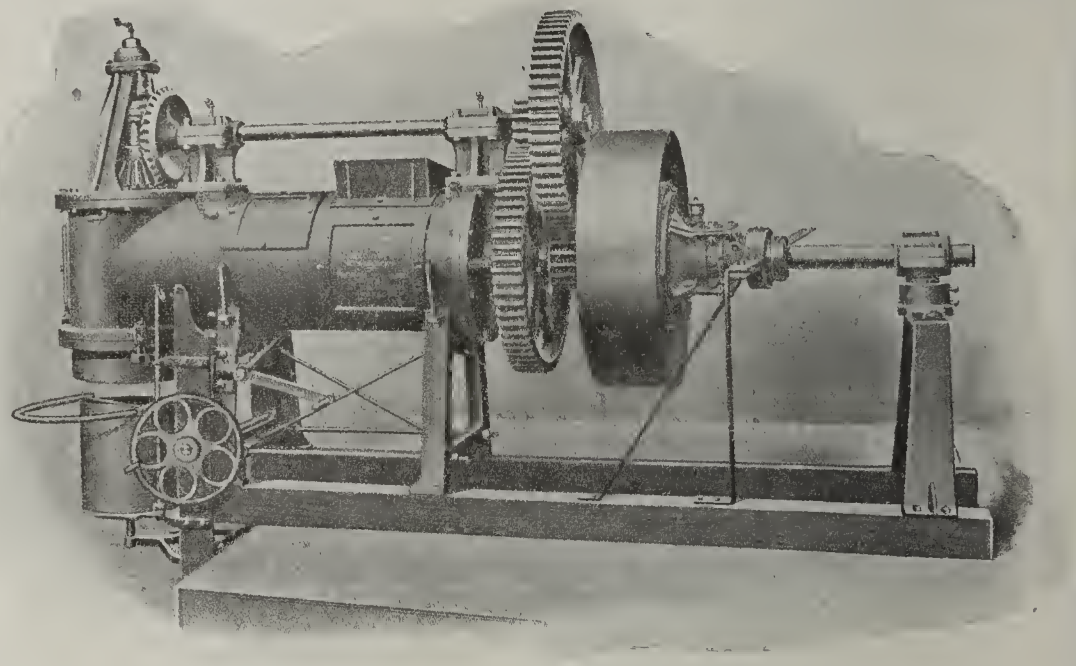
1908 NEW DEPARTURE

The Only Mill for Successfully Making Tile from 3-inch to 24-inch Diameter

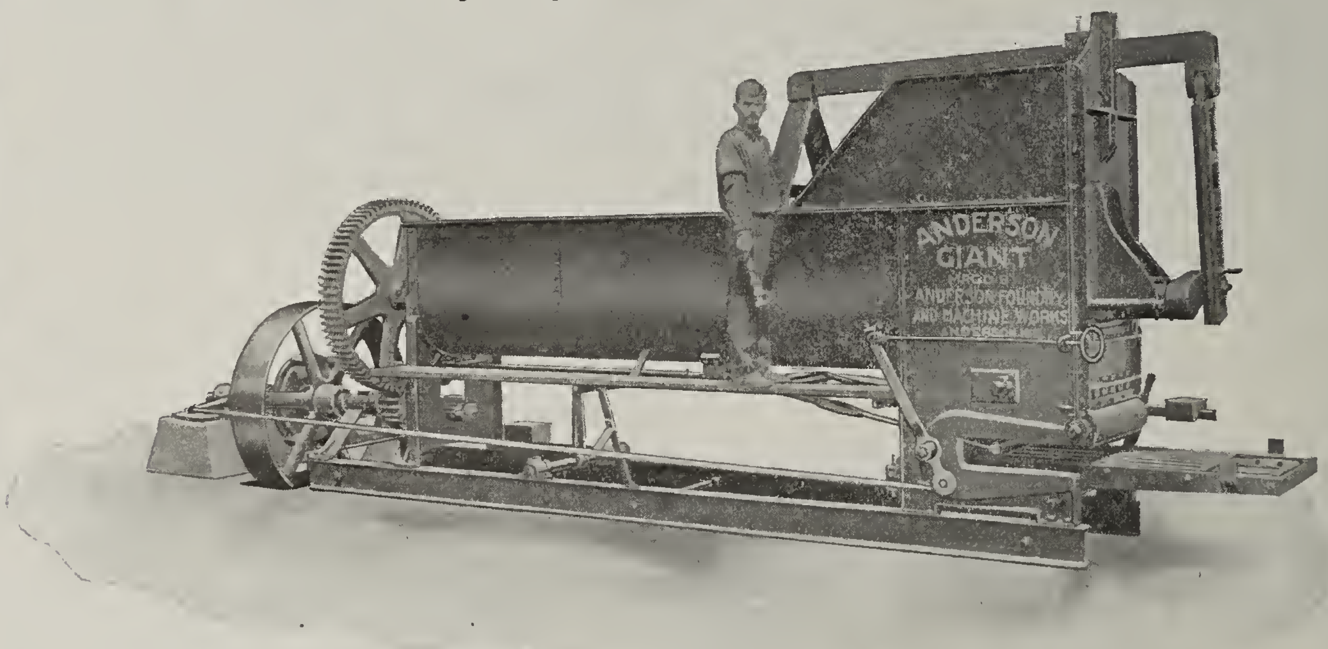
Greatly Improved in Strength and Convenience

Capacity Increased 60 per cent

Power Required to Operate, 40 per cent Less



Our New 1909 Model Anderson Giant



We also Manufacture a Complete Line of

Dry Press Brick Machinery and Brick Yard Supplies

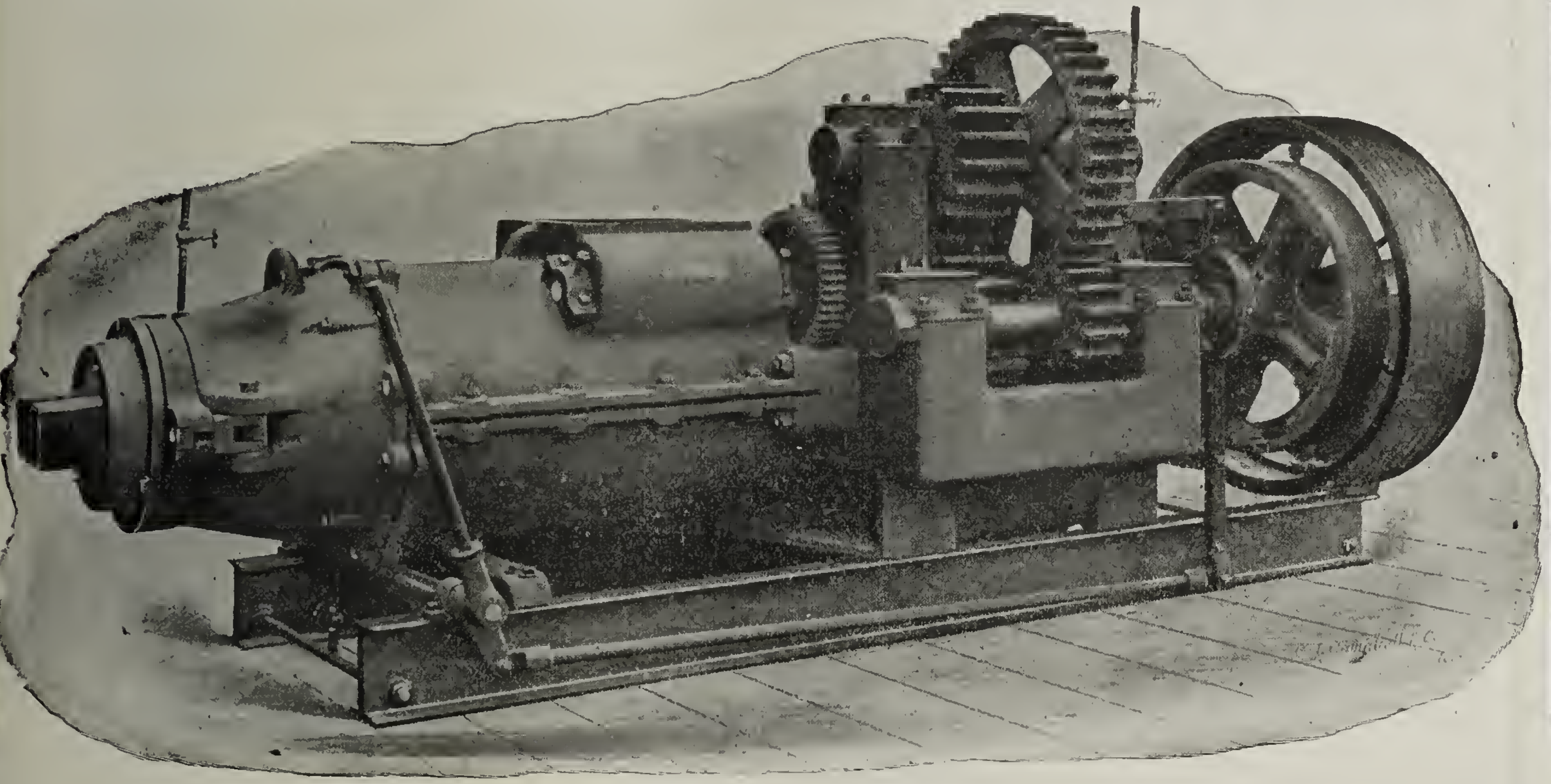
Write us your needs and let us figure with you.

The
Anderson Foundry & Machine Works

Southwestern Office, Wilson Building, Dallas, Texas. ANDERSON, INDIANA

BRICK MACHINES

Standard Pattern Horizontal Brick Machines in three sizes, ranging in capacity from 2000 to 5000 bricks per hour; in weight from 5000 to 14000 pounds. They are built for business and are most conservatively rated.



The Brewer No. 25

SOME FEATURES OF CONSTRUCTION

Gear frame cast in one piece. Knives forged from hard high-carbon steel, each one independently adjustable for pitch. Expressing screws and casings of white iron. Bearings self-oiling. Back-thrust bearing self-oiling, self-aligning independent and adjustable to take up the wear of the expressing screw. Feed-roll keeps the hopper clear. Mounted upon steel I-beams, self-contained. Construction, high-grade throughout.

If Marked
BREWER
It's Good

Our catalog contains complete descriptions and detailed specifications
Ask for it

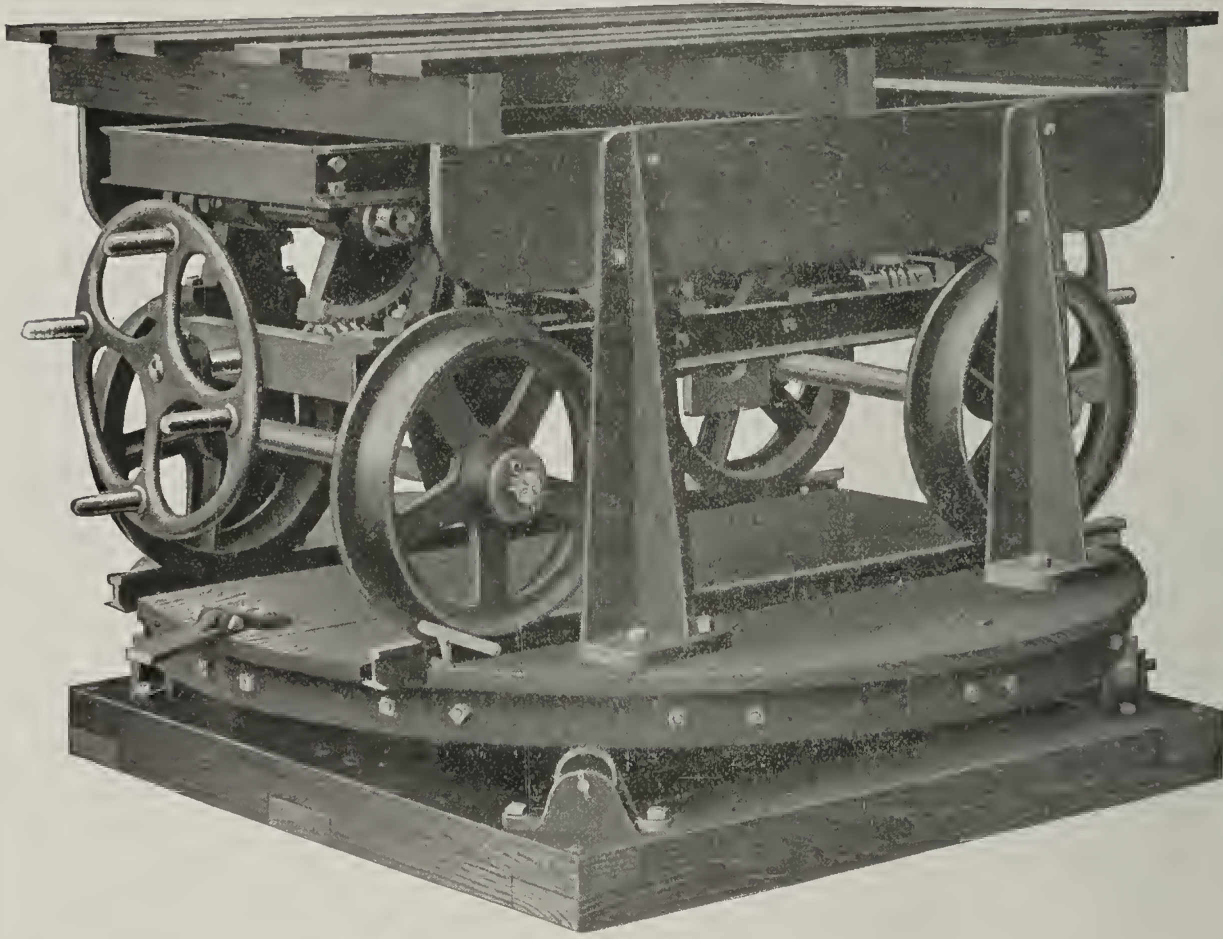
H. Brewer & Co.
TECUMSEH, MICHIGAN

If Marked
BREWER
It's Good

THE GUILDER ELEVATING AND LOWERING BRICK CAR

And Turn Table Used with Same

The most perfect car of the kind made. Easy to handle. Operated from either end. All iron and steel. Raised and lowered by Worm Gear and Segment.

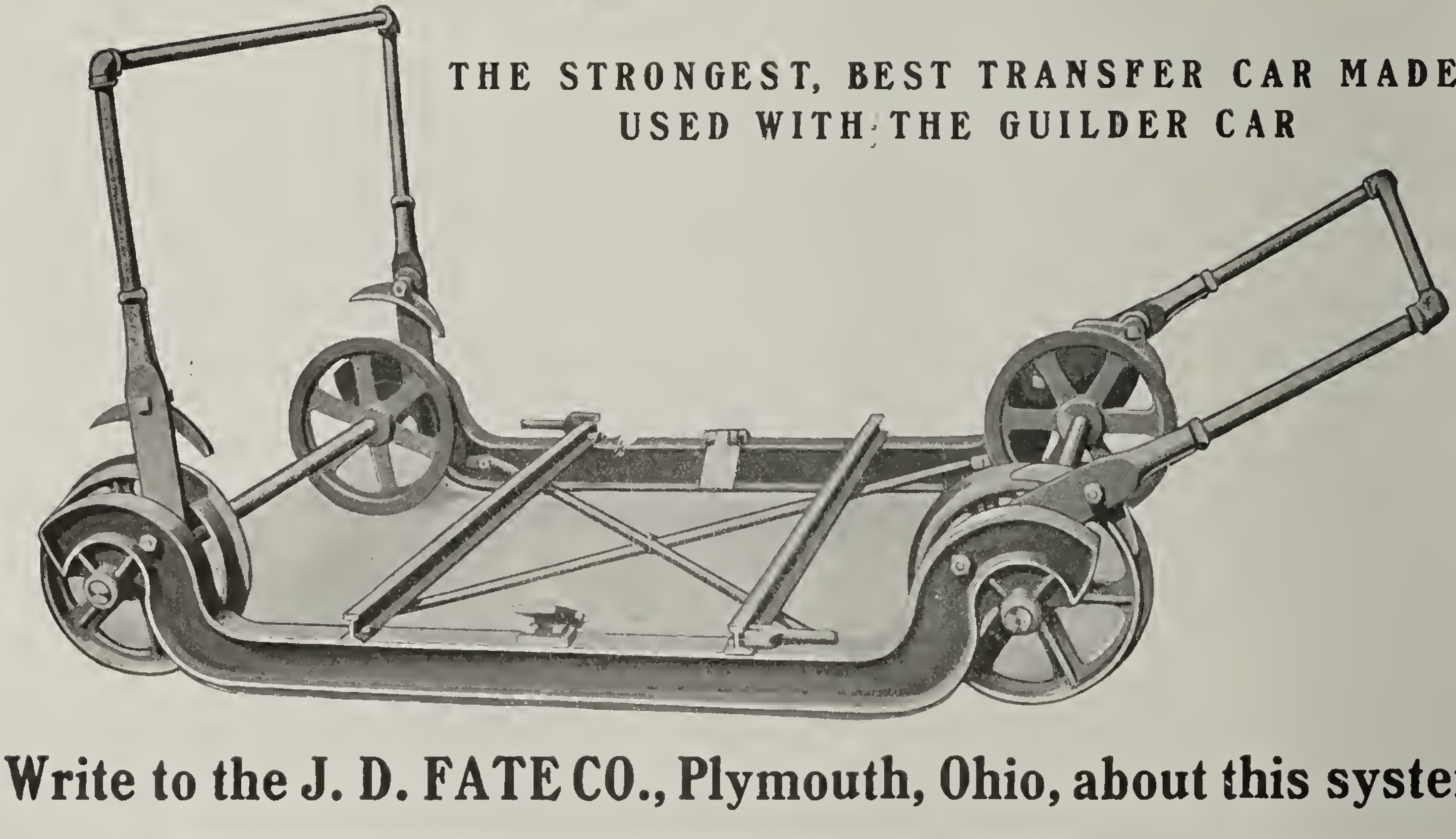


No Charge for plans or for the right to use this system.

◆

Pay only for what you get and nothing for a piece of "Blue Sky."

THE STRONGEST, BEST TRANSFER CAR MADE USED WITH THE GUILDER CAR



Write to the J. D. FATE CO., Plymouth, Ohio, about this system

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXIV. No. 10. CHCAGO, MAY 29, 1909. Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

FIREBRICK FOR BLAST FURNACES

A blast furnace superintendent has written for the Iron Age a most excellent article on the defects which shorten the life of firebrick linings. It is of interest and great importance to the firebrick manufacturers of this country who wish to produce such results as would make their brick better and therefore increase sales. He says:

"One of the inevitable results of the business depression of the past 15 months has been the demand for better goods and better service. The restricted market for both labor and materials has enabled buyers to ask and to get goods that came nearer to the desired specifications than was possible during the prosperous times just previous to the fall of 1907. This has been especially noticeable in all branches of the iron and steel industry. The enforced shutting down of many mills and furnaces gave ample time for needed renewals and extensions. Relieved of the rush of making repairs during full operation, managers have had a chance to reject materials that were not up to specifications, with no risk of loss on account of delay. Such an opportunity has afforded closer observation of the character of firebrick for blast furnace linings.

"It has often been the case that the firebrick lining would be bought, made, shipped and laid in the furnace in the least possible time, without opportunity for close inspection and rigid adherence to the specifications. This condition has been harmful to the brick manufacturer as well as to the furnace owners. In many cases there has not been a careful and detailed specification on the part of the purchaser, but too often it has been a case of a rush order of so many brick of certain sizes and shapes, and of certain well-known brands, and of standard dimensions and quality. There is not yet a close enough understanding between the furnacemen and the brickmen, especially on the seriousness of the seemingly slight defects in the composition, the dimensions and the shape of the firebrick.

"It is the object of this article to point out some of the defects of firebrick as seen from the standpoint of the blast furnace superintendent; to call attention to the need of closer agreement as to standards of composition and dimensions, and to urge closer attention to the small points in manufacture, the seemingly little things in the brick works. The leading firebrick companies have already expressed through their literature and their salesmen a desire to produce the kind of brick required, but they do not wish to incur additional cost of manufacture without a corresponding increase in the price of their brick or an increase in volume of business. The defects most common in blast furnace firebricks are irregularities in names, dimensions and composition; crookedness in shape, and lack of uniform burning.

IRREGULARITY IN NAMES.

"The majority of blast furnace linings are made up of 9 and 13½ in. shapes, with the base sizes of 9 x 4½ x 2½ and 13½ x 6 x 2½ in. brick. The manufacturers are fairly well agreed as to the names and numbers of the various sizes and shapes, but still there is some confusion, especially in the naming of the keys and side arch brick. What one manufacturer calls a No. 1 key or a No. 1 arch brick may be called by some other maker a No. 2 brick; and some makers call a No. 2 key what others call a No. 4. All brick of the same dimensions should have the same trade number, so as to avoid confusion in ordering and in handling. As long as there exists any uncertainty on this point the buyer in ordering should give all dimensions of each kind and size of brick after the name of the brick.

"Although it is advantageous to both the manufacturer and to the user to have the brand name on every brick, it is not safe to rely wholly on the trade names to designate to what parts of the furnace lining the different brick belong. It is much better all around to have the words 'hearth and bosh,' 'inwall,' or 'top' on each brick in addition to the name of the brand or the initials of the manufacturer. To have the kind of key or arch brick indicated by stamping its number on each brick is also a great help in handling the brick from the kiln to the furnace lining.

"Having the name of the part of the furnace for which each brick is made stamped on the brick is a great help and prevents confusion during the actual work of lining the furnace. The 'hearth and bosh' brick are not likely to be confused with the 'inwall' brick or with the 'top' brick, and brick with any of these names on them would not be put into a hot blast stove. Where different trade names are used on the brick to designate the part of the lining to which they belong, theer are pust so many more chances for mistakes in handling and laying the brick.

IRREGULARITIES IN DIMENSIONS.

"The matter of exact dimensions has been too much neglected by all concerned, partly because of carelessness in manufacture and partly because of lack of remonstrance from the furnacemen. It is possible that the furnace superintendent does not know that these irregularities in the dimensions of the brick will increase the cost of laying, and will indirectly shorten the life of the lining. It is possible that the terms of the contract for relining the furnace are such that these irregularities will make more money for the bricklayer, but in most cases the bricklayer is eager to do a good job and to lay the brick with least expense and most lasting results. It is possible, too, that the brick makers do not realize that these variations in dimensions make any difference in the cost and life of the lining.

"In laying a wall of 9 in. and 13½ in. brick, it is essential that all the 9 in. squares, keys, arch brick, wedges, etc., be practically 9 in. long and 2½ in. thick, otherwise there can be no even courses or bonds. And if the 13½-in. brick are not just 13½ in. long and 2½ in. thick the irregularities of the wall are even more exaggerated. Instead of brick being 9 in. long they vary from 8⅜ to 9¼ in. long, and a 13½-in. brick is likely to be 13⅛ in. long, and in some few cases it may be 13⅝ in. long. Differences in the thickness of brick are not so common, but they sometimes occur. In one instance the names of the brand and manufacturer stood out 3-22 in. from the surface of the brick because the die plate was not properly adjusted in the press. Such a defect could cause a crack of 3-16 in. between two brick if the stamped sides were laid facing each other.

"The front rows of brick are generally laid to a sweep, and if the keys are different length from the squares there will be irregular vertical cracks between the front rows and the next row. The cracks are usually filled with the very thin fireclay, but when the wall is thoroughly dried out cavities will form, and these will eventually give the furnace gases a chance to work through the wall.

"These irregularities in dimensions increase the cost of laying the brick unless one is satisfied with a poor job. If the brick need much trimming the cost for extra time of bricklayers amounts to about $10 per thousand.

"Besides getting rather unsatisfactory results at increased labor cost, there is another serious objection to this irregularity in dimensions because the dimensions are nearly always short. There is actually a deficiency of cubical contents that amounts to considerable in the whole lining, in some cases giving a shortage of 4 to 8 per cent. This is easily and quickly determined by weighing the cars of brick as they are received. The 9 in. squares from one large manufacturer weighed only 6.88 lb. each, and the 9-in. keys only 6.60 lb. a piece. From another manufacturer the brick were full or over in all dimensions, and the 9-in. squares weighed 7.87 lb. each and the 9-in. keys 7.31 lb. In some cases brick from the same manufacturer vary ¾ lb. in the same 9-in. shape. This shortage in weight and cubical contents is even more marked in the 13½-in. shapes, and in one case there was a difference of 1.60 lb. between the weights of 13½-in. squares of two makers, and a difference of 1. 75 lb. between different brick of the same make and shape.

"All these defects show lack of care in manufacture, and they can be remedied if proper stress in put on the matter by the management. It is generally understood that 'the making of brick is a very crude art,' but there is too much at stake to continue making firebrick for blast furnace linings without giving more attention to exact composition and exact dimensions.

IRREGULARITIES IN SHAPE.

"Another very common defect in firebrick is the curvature in the 9 and 13½-in. brick. This amounts to 1-16 up to ⅜ in., and is mostly in the brick that are stamped on one side. The convex side is invariably the surface that has the name of the brand or of the maker stamped on it. In laying such brick the bricklayer usually puts the convex side up and 'breaks its back' with a hammer to make it lie flat, thus weakening the wall and adding another gas crack.

"All brick that show a curvature of more than ⅛ in. when tried with a straight edge should be rejected, as it is impossible to get a good wall with curved brick. In some cases these curved brick have been trimmed and used, but this is putting loss of time and heavy expense on the furnaceman, and the result is not as satisfactory as when full sized straight brick are used.

"To avoid this curvature some manufacturers advocate making the brick 3 in. thick instead of 2½ in. Doubtless this would help to make a straighter brick, but if more care were taken in repressing and on the drying floor, there would not be so many defective brick on this account.

IRREGULARITY IN BURNING.

"All the brick that are intended for the same part of the furnace should have practically the same amount of burning and the same degree of hardness. This is especially important for the brick that go in the top lining of a furnace where abrasion and the action of gas so readily destroy the brick work. In all cases the brick should be burned hard enough to 'show up' all the iron particles. Although the brickmakers and the users know the above facts, it is often the case that brick for the same part of the furnace will be burned in different parts of the same kiln and under different conditions, so as to complete and ship the whole lining in the least possible time. This is bad practice, and especially so with reference to brick that are to go into the top of the furnace.

REMEDIES FOR DEFECTS.

"There should be no great trouble in overcoming all the above mentioned irregularities, and it is evidently the desire of the manufacturers to produce brick that are acceptable. It is also evident that there has been no very serious objection on the part of the furnacemen to the irregularities that have become, through long usage, characteristic of blast furnace fire brick. Why should we any longer be subjected to the 'additional 10 percent. to make up for breakage,' when there would be no need of adding such an amount to our estimate if all the brick were fully 9 x4½ x 2½ in., or any other specified dimensions? Fire brick are so well handled and shippped that there is scarcely any breakage. There should be no occasion to 'run short' of 9-in. squares just because the side arch brick were not of proper dimensions, and more squares were used than was calculated. If brick were true to the specified dimensions it would be very easy to calculate the number of each kind required.

"The evils of curved brick, warped brick and off-size brick can be remedied by the manufacturers by closer attention to the stiffness of the clay mixture, the molding, drying, pressing and burning. The dies and presses will wear out and will change in dimensions, and it becomes necessary to check up the measurements occasionally in order to guard against uneven brick. The shrinkage in drying and burning can be governed so that the finished brick is true to its name and specifications. The trimming of uneven brick by high priced bricklayers under hurry-up conditions is not only very expensive, but the scutching off of the 'skin' of the brick greatly reduces their wearing qualities and hastens their destruction.

CONCLUSION.

"In ordering firebrick for a blast furnace lining, the following points should be followed:

"1. There should be a distinct understanding between the purchaser and the seller as to the dimensions and names of each kind and shape of brick, and in writing the order the full dimensions should follow the name of each kind of brick ordered.

"2. All brick varying more than ⅛ in. from the specified dimensions and all brick curved more than ⅛ in. from a flat surface are to be rejected.

"3. Samples of each kind of brick are to be submitted and kept for comparison with the shipments.

"4. The lining should be made as fast as possible and shipped direct to the furnace, so as to avoid irregularities caused by changes in molds, presses and mixture.

"5. The mixture for each quality of brick should be watched to see that the materials are properly proportioned."

SCHOOL FOR BRICKLAYERS

By W. C. Smith and O. C. Pierson.

I desire to present something in which I know you as a brickmaker are interested, or at least should be—the School of Bricklaying—as I am sure that the cost of laying brick is vitally material in the use of brick as a building material. First, I want to bring before you some of the conditions in the building trades as I have found them from the contractor's viewpoint, and, if possible, to show you the need that something be done to better conditions. Not only is the general public suffering from these conditions, but if anyone particular class feels the results of these conditions more than another, it is the brick manufacturer.

It is needless for me to tell you that the use of brick is as old as time, and that brick and stone are still the principal building materials, especially for the class of larger building, with possibly one exception, and that is the use of concrete in foundations. Wood or frame houses for dwellings are being built in large numbers in many of the towns and cities all over the country and in localities where brick are made and are plentiful, and where lumber is scarce and necessarily expensive.

What reason, then, can we assign for building frame houses in preference to brick? Principally because they are less expensive on account of the cost per hour of brick labor, which is about double that of carpenter labor.

Last year carpenters could be hired at 25, 30 and 35 cents per hour, according to their ability as mechanics. The scale at Indianapolis for brickmasons was 65 cents per hour, weather good, bad or indifferent.

Now, gentlemen, what I am trying to show you is that it is not in the material, in which there is such a great difference in the cost of construction, but in the cost of labor.

Just in the same way that wood is being used for superstructure in preference to brick, the concrete block is being used for foundation walls, and just on the same account—the labor problem.

Now just a few figures to bear me out as to the relative costs of material. Indianapolis prices are taken as a basis of these figures.

I desire to make a comparison of the costs of materials on frame, concrete and brick walls, and necessarily take walls of nearly the same thickness.

First, we will consider the cost of materials for a frame wall and 120 feet around the exterior of a house and 10 feet high. Construction, the cheapest balloon frame.

125 pieces 2x4, ten at $20.00	$17.50
1,200 feet sheathing at $20.00	24.00
1,300 feet poplar sidings at 28 cents	38.00
2,000 lath at 6 cents	12.00
133 yards of painting	20.00
Nails	3.00
Total	$114.50

In a concrete block wall 1,040 blocks, each 8x8x16, will be required to build the same amount of wall, and at 12 cents each will amount to $124.80.

In 120 feet of 9-inch brick wall, 10 feet high, with an average amount of openings, there will be required 12,400 brick, which, at $7.50 per thousand, will amount to $93.00

Thus you can see that brick to build that amount of wall will cost $21.50 less than frame, and $31.80 less than concrete blocks.

Yet, when labor is added to each of the above constructions, we find that the brick wall will cost $29.00 more than the frame, and about $10.00 more than block. Brick laid in the wall at $11.00 per thousand mason measurement, with average amount of openings, is the same as $16.00 actual brick or kiln count.

Therefore, you can readily see that with brick at $7.50 per thousand and mortar at $1.50 per thousand the labor to lay the brick costs $7.00 per thousand, or almost as much as the value of the brick.

I believe that the cost of brick work in the wall at $16.00 per thousand, kiln count, is too high. And I can see only two ways to decrease this cost, one of which would be to decrease the price of brick, and that I am sure is what you gentlemen least desire and probably will not submit to. Now the other way, which I am sure is a feasible one, is to get more men into the bricklaying business. The unions have preached that restriction of apprenticeship is what raises wages, and this is exactly what the bricklayers have done in the past. As a consequence, they have gotten their wages up to the highest point of any trade in the country.

The union tells us that they have enough apprentices learning the trade. Each contractor is allowed two. It matters not whether the contractor employs thirty to forty men or only a few. It is the same. An apprentice to every three or four masons would not be too many, but it is not that way and not likely to be. On the very first day that we opened our school the union sent its representative out to tell us that they did not approve of teaching bricklaying, and that there are already enough men in the business, and that he supposed that the brickmakers thought that the offer by one of your members to give the first graduate of our school a job at $6.00 per day was an indication that if there were more bricklayers at lower wages more brick would be used. I have always believed that a skillful mechanic, who is able to do all kinds and the best of work, should be paid good wages, and I consider that the amount now paid for bricklayers is good pay for the best of them.

Restrictions are placed on the mason by the union in such a way that the amount of work is limited. In the case of men at work on the walls or piers or between windows, where each one has an equal amount to do, one is not allowed to do any more or go any faster than the other, thus the best man's work is limited or gauged by the poorest or slowest. Then it has come to the point that in the busy season of the year it is nearly impossible to get enough men to do the work, especially competent ones. The contractor is compelled often to hire anybody that comes along and calls himself a bricklayer and carries the union card. They get so independent at times that the contractor can hardly say that he is boss, further than hiring them and seeing that they get their pay. He can not say a faulty word in reproof or about faulty work to the workman but that he will come down off the scaffold and demand his pay, knowing that all he has to do is to go a little farther down the street for another job.

While there are a good many good, industrious men among them, the majority of them are so ornery and good for nothing that there can be no dependence put in them. Consequently, the contractor is at their mercy, he not knowing one day what the next will bring forth.

Some instances of my own personal experience: In 1907, while building the Plaza Flats, I had fourteen masons at work before the 4th of July, and only five reported for work the day after. Monday morning there is scarcely ever a full force to start work. I am ordered not to do any work before or after hours. Many do not care whether they work more than two or three days a week, and seldom let a week pass by without making a draw on their wages before Saturday. Nothing seems to please this good-for-nothing class of men better than to take the young apprentice out nights and break him into their ways of carousing around and dissipating. One of the largest contractors in Indianapolis, who works from twenty-five to forty masons in the busy season, told me he has had no apprentices for two years, and will not have because of their turning out to be such ornery men.

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*A paper read before the Twenty-third Annual Convention of the National Brick Manufacturers' Association, Rochester, N. Y., Feb. 1-6, 1909.

It was just these deplorable conditions, a few of which I have tried to describe to you, that prompted me to take up this work as instructor of bricklaying at the Winona Technical Institute at Indianapolis, Ind.

Now I believe these conditions can be changed in time by teaching a lot of young men, who are anxious to learn a trade, to lay brick. They have been kept out of this trade so long that there will be little trouble in securing plenty of sober, industrious young men who want to earn an honest living, and be glad of the opportunity.

The wages pertaining in this trade are not in keeping with those of other trades, in many of which a higher degree of skill is required.

We will graduate our first four students at the end of this month. We started our school with five students and have added nine since. The hard times of the last year and a half have prevented a number of young men from taking the course, they not being able to get enough money ahead to pay their board while in school. We have room for practically an unlimited number of students in this trade, and we are confident that we will have at least twenty-five or thirty students in this trade the coming year. During the past year I have taken the contract of brick work for seven frame houses, each of which required from 25,000 to 30,000 brick, one two-story pressed brick veneered house requiring 25,000 pressed brick and 20,000 common brick, another two-story brick house taking 75,000 brick, and a one-story brick store building taking 75,000 brick. On all of this work the students were used and paid for their work according to what they were able to do.

I consider that the students need this work on regular building construction in learning the trade, and have adopted this plan to give them the practical work, thereby making practical workmen of them. We are looking forward with great expectancy to the establishment of the Hotel Employes' Training School with us, which is practically assured now.

A Few of the Students at Work

Men to learn this trade do not have to be peculiarly adapted for it, but any young man, say from seventeen to thirty years of age, who is able-bodied and of average intelligence and ability and not lazy, should have no trouble in learning it.

Now just a few words about the Winona Technical Institute. Six departments are in operation this year. Printing, lithography, pharmacy, tile setting, foundry and bricklaying.

Our bricklaying course covers a term of nine months, and consists of instruction in the use of tools, work in building walls, corners, flues, etc., plumbing, leveling and bonding walls both in common and pressed brick. Study of materials, kinds of brick and manufactured mortars, how made and used. Architectural drawing sufficient to enable the students to make and read building plans readily. Estimating costs of materials and labor of brick work.

The hotel keepers expect to erect and equip a model hotel building, costing $200,000 on our grounds, the construction of which will mean practical work for our bricklayers.

Now, gentlemen, this school is not self-supporting, and therefore must look to some outside aid. I am sure that had it not been for the scholarships already provided by some of you this department would not have started, and I am sure that there is no one more vitally interested, or that should be, than the brick manufacturer. The contractor can not be looked to because his hands are tied, and he must stick to his union men at least until we can provide enough men to cut some figure in the business. A few hundred men in this trade would not lower wages, but would prevent wages going higher. In helping these young men to learn this trade, you are not only helping each one of them individually, but you are helping to create a demand for your manufactured product in this way. Now I realize that the unions are not going to throw open their arms wide, or at least not right away; therefore, my aim is to train these men in such a way that they will be prepared to go out after this house work and foundations that are now being built of frame and concrete blocks; and then the unions, seeing what our graduates are accomplishing, will be glad and anxious to get them in with them.

Many, I am sure, will not likely go into the union because of the opposition they have found in trying to get to learn this trade. Practically all of the students have tried time and again to get in as apprentices. I know one who tried every year for four successive years without success.

Last year when this matter was presented to you there was a generous response, and forty-five scholarships at $60.00 each were subscribed for, but out of this number a few have not been realized, though an amount sufficient to operate the department has been subscribed.

Students at Work on Regular Building Construction

For the next few years at least $2,000 per year will be needed to carry forward this work.

National Association of Employing Lithographers, $4,000 for five years, $20,000; United Typothetae of America, $3,000 for three years, and three more if necessary, $9,000 to $18,000; National Founders' Association, $4,000 for three years, $12,000; Tile Manufacturers' Association, $5,000, besides $8,000 to $10,000; National Brick Manufacturers' Association, $2,500; National Metal Trades Association, pending, $3,000 for four years, $12,000, and International Stewards, pending, $15,000.

These associations have also provided equipment, as follows:

Tile	$ 4,000
Foundry	12,000
Lithography	25,000
Printing	50,000
Machinery	30,000

In view of what the other associations are doing, can the brickmakers' association afford to let this opportunity go by?

I consider that this method of providing scholarships for young men to learn the trade is the very best way in which to help them learn it. Tuition for the course is $60.00. Besides, it costs the student about $200 for board and living expenses while in the school, and that is quite a sum for the poor boy to get together while working at low wages. Instead of the scholar paying the tuition, the scholarship is loaned to him for a period of two years, upon receipt of his note for that amount. This permits him to take the course, and gives him a year's time in which to work and earn enough to pay it back, when it becomes available for another student. (Applause.)

GANISTER IN BLAIR COUNTY, PA.

The ganister quarried in Blair County, Pa., is used for making refractory brick for furnace linings. It occurs as a bed or beds in the formation known by geologists as the "White Medina" sandstone, which forms the crests of Tussy, Lock, Loop, Dunning, and other mountains. Practically all used at present is obtained from bowlders that mantle the mountain sides, having rolled down from the higher ridges. The supply available in this way is very great—luckily so, as the natural rock is difficult and costly to quarry.

The qualities of ganister that make it suitable for refractory brick are disputed, but seem to depend chiefly on its greater strength. It is used in furnaces that do not undergo sudden changes in temperature, and in situations where it will not come into contact with material that would flux with it.

THE CATALOG VS. THE SALESMAN*

BY H. J. FLOOD, PRES. CHRISHOLM, BOYD & WHITE CO., CHICAGO.

We are assembled here for the purpose of consulting together for our mutual benefit as manufacturers of clayworking machinery. As my contribution to this end I have endeavored in this paper to set forth the advantages of selling our product by means of printed matter and correspondence rather than by the employment of traveling salesmen. Having thoroughly tested both methods for many years, I believe I am in a position to express opinions on the subject which are based on actual experience, and in which mere theory has therefore no part.

Those who are here present are well aware that there have been more improvements made in brickmaking and other clayworking machinery and appliances during the past twenty years than in all preceding time, and that in recent years hundreds of thousands of dollars have been expended by the various concerns represented here in developing and perfecting their product. No expense has been spared in the effort to bring clayworking machinery up to the high standard of to-day, and large amounts of capital have been invested in the building of modern factories and in the installation of new and the most modern machine tools and equipment, so as to be able to produce the best possible machinery at the lowest possible cost. The manufacturing cost has thus been reduced to a minimum.

But when the question of the cost of making sales is considered, I am of the opinion that, speaking generally of our trade, no improvement is discernible over the methods of twenty years ago. Then, as now, the plan generally employed in endeavoring to effect sales of clayworking machinery was to send a hired salesman or an agent to see the prospective customer, or for the manufacturer to go in person, and it was often necessary to travel long distances at large expense for that purpose. Sometimes this was varied by inviting the customer to visit the factory at the expense of the manufacturer, and also several brick and other clayworking plants where his machinery was installed, in order to see the machines in actual use. In this connection, it should be said that the manufacturer who travels in the interest of the selling department of his business should be considered a salesman for the time being, and his time and expense while acting in that capacity should be charge to selling expense account.

There have been occasional cases in which persons who were contemplating the purchase of clayworking machinery have made trips of investigation, visiting various machine shops in order to see the machines both under course of construction and in operation, so as to satisfy themselves as to what particular make of machinery they should purchase. These visits have usually been preceded by a large amount of correspondence with the manufacturer and the sending of catalogs and other advertising literature. But contracts were rarely closed by direct correspondence, without the intervention of traveling salesmen, and upon receipt of an inquiry the first thought of the manufacturer has usually been to promptly send a salesman to see the possible purchaser, whether the distance to be traveled were but a few miles or across the continent.

These methods of selling, as you all know, are still in general use, and it is apparent that in our trade manufacturers have not given as close study to the selling end of their business as they have devoted to the development, perfecting and building of their product.

It is impracticable to formulate fixed rules for the guidance of salesmen which will meet all the conditions they are liable to encounter. Consequently, unless they are intrusted with full authority as to prices, terms, delivery, etc., they are often liable to be handicapped in competing for an order, and they are frequently tempted to make statements which cannot be verified and promises which cannot be carried out, and that are neither satisfactory nor agreeable to the manufacturer, and which result in misunderstandings, troublesome negotiations and sometimes great loss.

The successful salesman of clayworking machinery should be an engineer of some ability, a clayworker in all its branches, and an honest man of good personality, and he should be capable of demonstrating in actual work the correctness of every statement he has made. Above all, he should thoroughly understand the machinery he is selling and be capable of adjusting himself to every condition he may meet during the negotiations. It is needless to say that men with these qualifications are hard to find, and necessarily command large salaries. They are in fact, usually either in business for themselves or connected with some larger industry with greater opportunities.

When a salesman goes out after a contract he generally meets a number of representatives from competing concerns in his line. The buyer knows that these salesman are all very anxious to secure his order, and each salesman feels that his job may depend on his success in this particular case. Nine out of ten buyers will endeavor to take advantage of such a situation, and will proceed to dicker and hammer down prices and demand unreasonable terms, and will frequently intimate and often say, "We lower." This is the sort of thing that gives the average favor your machinery, but the other fellow's price is much lower." This is the sort of thing that gives the average salesman "cold feet," and often leads to ruinous price-cutting, with the result that when the contract is finally let, the manufacturer finds his margin of profit exceedingly small after deducting the average selling expenses. It must also be taken into account, that out of all the salesmen who are in competition but one gets the order. The expenses of all the others are a total loss to their respective employers. There have even been instances in which the direct profit on the sale was insufficient to cover the wages and traveling expenses of the successful salesman; and it is certain that in a great number of cases the combined expenses of all the salesmen concerned have amounted to more than the actual profit and, in some cases, to nearly as much as the value of the machinery in question.

It is not my intention to make an analytical statement of the cost of selling machinery by the old-fashioned, two-legged-salesman method. Each of you can figure that out from your own books and your own experience. The purpose of this paper is to show that brickmaking and other clayworking machinery can be successfully marketed by the mail-order plan, with a saving as compared with the other plan sufficient to constitute a handsome profit, and to prove that the traveling salesman is, as a rule, a wholly unnecessary and very expensive auxiliary to the catalog.

There are in Chicago two mail-order houses which sell almost every known commodity, from a paper of pins to a locomotive. Each of these concerns does a business of approximately fifty million dollars per year. Neither of them employ traveling salesmen, depending wholly upon their printed salesmen, that is to say, on their catalogs, which are sent to any address on request. These enormous houses have been built up during the last twenty years. They are referred to here because of their conspicuous success in the mail-order business, and their methods have been adopted with good results by a number of manufacturers throughout the country, who have dispensed with traveling salesmen and now rely on printed matter and correspondence for the promotion of sales.

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*Read at the National Clay Machinery Association annual meeting.

It may safely be asserted, allowing the highest amount that it is practicable to expend for illustrated catalogs and other printed matter of the finest quality procurable, that the cost of salesmanship by this method is less than one-tenth of the cost of the two-legged-salesman plan.

For example, any person, firm, or corporation, having decided to go into the brickmaking business, is certain to ask the various manufacturers of brickmaking machinery for catalogs, prices and other information. Prices can be quoted and terms made and all other information be supplied as intelligently and satisfactorily by mail as through the direct medium of a traveling salesman, and with much greater certainty of their being in exact accord with the wishes of the manufacturer.

The ideal catalog will contain engravings of the finest quality and-well-written text matter, setting forth clearly in every detail the merits and utility of the manufacturer's produce; and it is thus possible to present the subject to the possible buyer more efficiently and convincingly than it is usually presented by the average salesman by means of a personal interview. All that would be left for him to do would be to repeat what had already been better said on paper.

Machinery manufacturers should not be drawn into the business of promoting companies to build brickmaking plants, and they cannot afford to send out salesmen for that purpose, even though assured in advance of an order for machinery. Such expenses, if incurred, should be borne by those who are going to profit by them; that is, by the buyer of the machinery. Those who go into brickmaking do so because they expect to profit by it, and they will buy their machinery and equipment from somebody whether they are interviewed by salesmen or not; and there would be just as many contracts made and as much machinery sold by manufacturers in our line it there were no traveling salesmen whatever employed, and on a much more profitable and satisfactory basis.

Many persons who desire to go into the brick business have had no previous experience in that line, and they frequently and naturally call on the manufacturer of brick machinery for information and advice in regard to every phase of the subject, from the quality of the clay to the marketing of the brick. If a salesman is sent to look over the ground and his recommendations are followed, and the enterprise afterwards from any cause proves a failure, the manufacturer is sure to be blamed. But if the venture proves a success, does the manufacturer get any credit? Why should we send out salesmen at our own expense to act as consulting engineers and advisers without being paid for such service? In such circumstances, as in all others, "The laborer is worthy of his hire."

I have been for many years connected with a company which manufactures machinery for making brick by the dry-clay process. In the early days, we relied almost wholly on traveling salesmen for the marketing of our product. The selling expenses unedr that system were enormous, and so great as to swallow up nearly the entire profits of the business. The profits we should have made went for salesmen's salaries and traveling expenses. We finally decided to try the experiment of dispensing altogether with salesmen, and to do business solely by mail. The experiment has proved a gratifying success, and for the past six years we have been able to sell the output of our factory by means of the catalog—our printed salesman—supplemented, of course, by active and painstaking correspondence.

In some cases the prospective purchaser asks for advice which cannot be conveyed satisfactorily by mail, and when it becomes advisable we send a competent man to meet the customer, and we have found, as a rule, buyers are willing to pay for such service. The men we send out on such occasions are not salesmen, and are not expected to do any selling.

Sometimes a buyer prefers to come to our plant for the purpose of consultation and to inspect our machinery and go into matters of detail. The majority of these make this trip at their own expense, but sometimes when circumstances warrant it, we allow a credit of their railroad fares on the price of machinery purchased.

Our methods of salesmanship by mail are very simple. Having received an inquiry, we make it a point to give all the information asked for in as full and clear a manner as possible. If the specifications submitted to us are not clear, we ask for further information and, if possible, have the prospective purchaser specify every machine on which he desires prices.

In our catalog, we illustrate our various machines by the finest engravings procurable, and the materials and printing of our advertising matter are of the very highest grade. In our experience, the finest printing is the most profitable.

Any manufacturer who decides to adopt this method of marketing his machinery should not overlook the fact that the preparing and issuing of an effective catalog is but one element in the system. It is necessary to obtain and maintain an up-to-date mailing list of the brickmakers of the country and others interested in this industry. At intervals, this list should be circularized and tried out with some good advertising material, which will be a test of the correctness of the addresses embodied in the list. To those who respond in any way, it may be desirable to send the general catalog—your printed salesman—followed by strong practical letters of the business-getting kind, dealing strictly and intelligently with the subject in hand and with no other.

The precise treatment of inquiries resulting from the distribution of advertising matter is something into which I do not desire to enter, for each of you have your own ideas on that subject, and will doubtless prefer to be guided solely by the light of your own experience. In my judgment, however, every inquiry requires careful study and consideration and should be replied to with the utmost care.

I have endeavored to outline the system of salesmanship which we have found best and most profitable for our business and by means of which we have enjoyed a fair share of prosperity, and I trust these suggestions may result in some of you taking steps which will add some figures to the right side of your balance sheets. There is no question in my mind that if you adopt the printed-salesman system, the volume of your success will be measured by the quality of brains and energy you put into the preparation of your advertising literature and the knowledge, care and force entering into the subsequent correspondence.

INCREASE THE OUTPUT—REDUCES THE EXPENSES

The last few weeks a number of improvements have been made to the yard of the Rose Brick Co., in Roseton, N. Y., at a large cost, which will tend to increase the product of the plant to the extent of 25 per cent and at the same time cut down the cost of manufacture 25 per cent. Considerable railroad has been built in close proximity to and through the yard and locomotives and cars have been purchased for it, also a motor generator and other machinery. The yard started up at full blast this morning. It had been running under the old system the last two weeks.

The work of installing the new machinery is being superintended by Joseph Cite of Fishkill-on-the-Hudson, a man who thoroughly understands his business.

FIFTY YEARS A BRICK MAKER

"I was born in a brick yard."

This is a favorite expression of E. J. Rutland and it is not so very far from the truth.

Back in 1853, or on January 11th of that year to be exact, Mr. Rutland was born at Sheerness, England. As a small child he played around the brick yard and as a small boy he worked there, having a knowledge of the clay business that would have done credit to a man. When twenty years old Mr. Rutland came to America, landing in New York in 1873. A year later he removed to Ohio and became identified with the Clay Working business and with the manufacture of Clay Working Machinery. Since that time he has been constantly engaged in the manufacture of Clay Working Machinery of its operation.

Mr. Rutland is not a theory man but one of practice. He has been through the practical end of the clay manufacturing business from his early infancy to the present day. He knows the clay business better than a book because his knowledge has been gained by his own personal observation and experience, and there are few who are better authority in his line.

E. J. Rutland

Since arriving in Ohio in '74 Mr. Rutland has been identified with The American Clay Machinery Company and its predecessor. His first employment was with J. W. Penfield at Willoughby where he was put to work in the Penfield Clay Works. Here he developed such good practical qualities that when the end of the season stopped the manufacture of clay products until spring, Rutland was transferred to the Penfield machine shop to build clay working machinery, being engaged on the erecting floor.

In those days the great demand was for the Penfield plunger machines and Mr. Rutland became expert in the erection of these machines. His duties at the clay plant had made him thoroughly conversant with their operation on the large variety of clay goods being constantly manufactured there. In both the machine shop and the clay plant, Mr. Rutland evinced excellent qualities of mechanical skill and he soon graduated from the shop to the field where it was his duty to erect and start new machinery for customers. In this capacity Mr. Rutland developed a selling ability and a circle of friends and acquaintances which maintain to this day.

His special ability in the manufacture of soft mud brick made his opinion and judgment sought after and valued by those contemplating the establishment of plants. Many customers of the American company to this day will willingly testify to the good judgment he exercised in selecting their outfit for them, and to his assistance in erecting their plants.

Owing to his wide experience and acquaintance Mr. Rutland had many offers to take charge of clay plants, all of which he declined, because he sought greater and more extensive knowledge. However, in September, 1890, he became superintendent of the Virginia Paving & Sewer Pipe Co., with factory at Chilhowie, Va. Here he remained for three years when the plant changed hands and Mr. Rutland returned to Willoughby to resume his former position with the Penfield interests.

In 1896 when The American Clay Machinery Co., was formed by the consolidation of Penfield & Son and the Frey-Sheckler Co., Mr. Rutland dropped out of active work for a few months, until the selling forces of the two companies could be reorganized, after which he resumed his work with the American Company and he has since remained on its staff.

Mr. Rutland still maintains his home at Chilhowie, having been married to a worthy lady of that place, and there he enjoys the happiness of domestic felicity.

This, then is, in brief, the history of an authority in his line. Earnest, sincere, industrious, honest, capable and trustworthy, the young Rutland became the man. His life so lived that confidence and respect were his freely given portion. To know him was to respect him. His ability, industry and knowledge has helped to build the American line of Clay Working Machinery, almost from the time of its inception, when a few hundred brick a day was the limit of capacity, to the present when hundreds of thousands are no extraordinary day's run. From a few machines of small capacity the line has grown to hundreds of machines, some with seemingly limitless output.

Mr. Rutland is widely known and as widely respected. His acquaintances in the trade will be pleased to note the excellent likeness which accompanies this article.—*American Clay Magazine.*

CLAY AND BRICK PRODUCTION OF BIRMINGHAM

A careful estimate has just been made of the annual value of the clay and brick products of the Birmingham, Ala., district, and to the surprise of many it has been found that the annual value of this output is $2,170,000, of which common brick is valued at $520,000, pressed brick at $150,000, fire brick at $800,000, fire-proofing at $100,000, sewer pipe at $250,000, paving brick at $300,000 and clays at $50,000. The brick industry of the Birmingham district is becoming one of its most important products.

PACIFIC COST NEWS ITEMS

There is more brick work going on in San Francisco at the present time than has been the case during the past eighteen months and the brick market is getting settled again upon a substantial basis. The improvement in the market due to this cause, together with the fact that one large and influential firm has secured the selling agency for a large number of the plants operating around the Bay, has resulted in a firmer feeling and there is but little chance now of a slump in the brick market as the production will be regulated to meet the demands. While there are not as many buildings being erected in San Francisco as there were a year and a half ago there is more brick being used as most of the structures now being put up are of Class "B" or "C" construction and brick is used almost exclusively. Several large structures are now under way, notably, the new Hall of Justice, and a number of school buildings, and several other municipal structures are being planned for the immediate future. Prices of brick remain about the same and it is doubtful if there will be any attempt to name a higher rate as this would have the effect of starting a number of plants now remaining idle. There is also quite a quantity of old brick still to be had and this is coming on the market in small quantities. The ruins of the old City Hall are now being torn down and the brick from that structure cleaned. Part of this will be used in the rebuilding of the part of the structure adjoining the Hall of Records. Just what will be done in regard to the rebuilding of the City Hall has not been determined upon as yet but several plans have been offered. A new civic center is being talked of and a magnificent group of buildings planned for a new site. Other plans have been made for a building on the old site.

The Vallejo Brick & Tile Co. is very busy at the present time turning out paving brick and it is announced that large orders have been booked for this article for the present season. The plant for the manufacture of these bricks is only about one-half completed but 40,000 brick are now being turned out daily. The Board of Harbor Commissioners of San Francisco have placed an order for more than half a million paving brick and will use these on the piers where the present asphalt paving has proved to be unsatisfactory. There is a growing demand for paving brick and it is felt that this article will soon come into general favor here for street work. In Oakland, across the Bay, a series of tests is now being made by the Street Department of the Board of Public Works to test the value of paving brick. Eastern vitrified brick is to be tested along with the local product and some interesting results are anticipated. The city has been divided into districts and only a certain kind of paving will be allowed in each of these districts. The tests that will be made here will be the most exhaustive, perhaps, that have ever been made by any Coast City.

The Holmes Lime Company, Mutual Savings Bank Building, San Francisco, is calling attention to the fact that deliveries of fire brick from the Ione plant will commence on May 20th and advise early orders as the demand for this product has increased to such an extent that even with the increased facilities that have been installed during the past winter it is uncertain that the supply will be sufficient to meet the demand. The manufacturing season of this concern extends from April 5th to November 1st, and orders for special sizes must be received early in the season. Some large shipments have just been made to the Hawaiian Islands and Central American ports.

The Carquinez Brick & Tile Company has just added a new steam shovel to its equipment and a new kiln is now under way to increase the daily capacity to about 100,000 brick. A new drier is also being erected and the plant remodeled generally.

The plant of the Western Brick Company at Richmond, Cal., has been enlarged by the addition of considerable machinery and is now operating at full capacity.

The Corona Pressed Brick & Terra Cotta Co., has just secured a contract from the city of Los Angeles for the delivery of about three miles of eight-inch vitrified sewer pipe. This same concern has also contracted to supply the city of San Diego with 100,000 feet of sewer pipe of various sizes.

B. L. Tracy will shortly commence the manufacture of brick at Brandon, Ore.

The St. Johns Clay & Pressed Brick Co., of St. Johns, Ore., has changed its name to the Pacific Brick & Marble Co.

Frank Thomas and Mertz Bros., of Chicago, have purchased twenty acres of land near Seattle, Wash., and it is anounced that they have completed plans for the erection of a pottery plant to cost in the neighborhood of $500,000. Ironstone chinaware will be the principal article manufactured.

G. R. Lay, of St. Joseph, Ore., is planning to commence the manufacture of brick at that place within a short time.

Bean & Co., have completed the erection of a brick plant at Eugene, Ore., and will be ready for operations within a very short time.

G. A. Misenor, manager of the Hydro-Silica Company of Seattle, Wash., has prepared plans for the construction of a brick plant on Maury Island. The plant as planned will have a daily capacity of 48,000 face brick or 60,000 common brick.

The Ballard Brick Company has been incorporated at Seattle, Wash., and it is announced that a plant of large size will be erected in the vicinity of that city.

Zapel & Chaasdon are planning to open a brick yard at Kettle Falls, Wash.

The brick plant of John Lynch, Conchise, Ariz., has been sold to Darling & Parsons, who will make some needed improvements and commence operations in the near future.

A bed of chinaware clay has been discovered near White Salmon, Wash., and a number of tests have been made to determine its value. S. G. Dewsnap, director of the State Mineral Department, pronounces the clay of excellent quality. An exhibition of the clay will be made at the Alaska-Youkon-Pacific Exposition that opens at Seattle on June first.

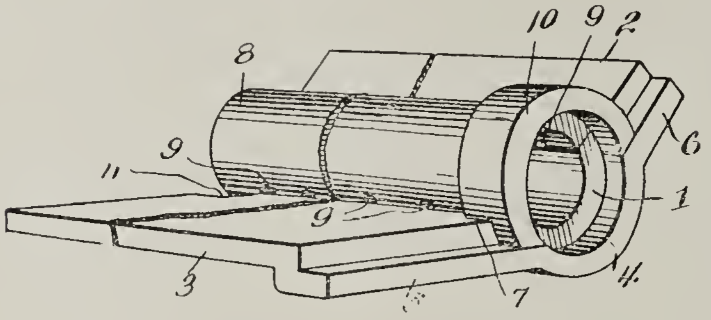
The Mount Shasta Volcanic Hollow Tile & Cement Co., has been incorporated at Yreka, Cal., with a capital stock of $1,000,000. The directors of the company are Abner Weed, E. L. Williams, W. E. Tebbe, George A. Tebbe and R. S. Taylor.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

914,231. Drain-Tile. William H. Booth, Santa Cruz, Cal. Filed Sept. 9, 1908. Serial No. 452,188.

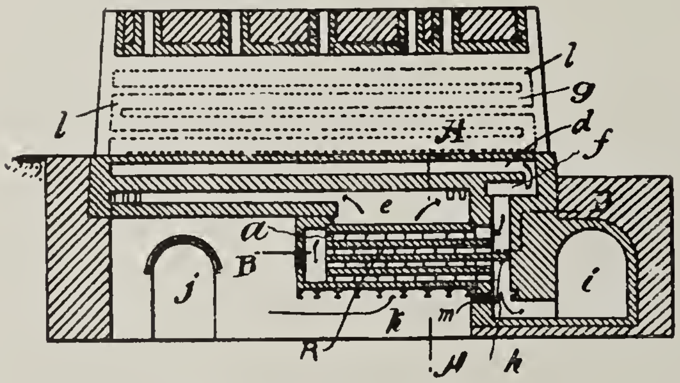
A drain tile comprising sections each composed of an upper and a lower member, one superposed upon the other, the lower section being provided with oppositely inclined flanges and the upper section having at its lower edges perforations communicating with the interior of the tile.



A drain tile composed of upper and lower sections divided longitudinally, the lower section comprising a semicircular member, and oppositely inclined flanges and an offset at one end, said flanges being provided with recesses, and an upper section fitted to the lower section and provided with perforations which communicate with the interior of the tile, said upper section being provided with a cap or flange which forms a continuation of the flange of the lower section.

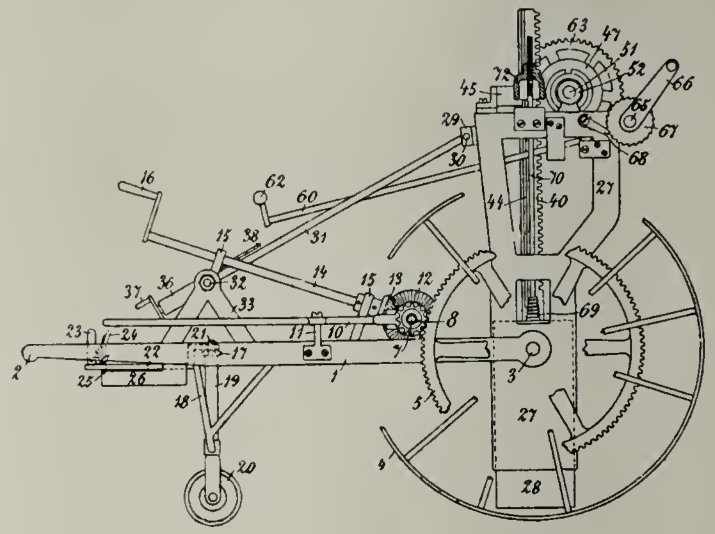
914,525. Continuous Heat-Interchanging Arrangement for Coke-Ovens. Ernest Solvay, Brussels, Belgium. Filed June 6, 1907. Serial No. 377,539.

In a coke oven arrangement, the combination of a coke oven, having its side walls extending downward, so as to form an open space below the oven, combustion flues in the side walls of the oven, a heat interchanger structurally independent of the oven, located in said open space, and independently supported by the same foundations as the extended side walls, a sole flue for the reception of the spent gases of combustion, extending horizontally below the floor of the oven, an inclosed hot air space between said sole flue and the interchanger, and communicating with the combustion flues, and a discharge flue from the sole flue, having centrally located partition, whereby the spent gases of combustion are caused to pass through one-half of the interchanger in one direction, and through the other half of the interchanger to the outlet, in the reverse direction and means for admitting heat to the heat interchanger below the same, substantially as and for the purposes set forth.



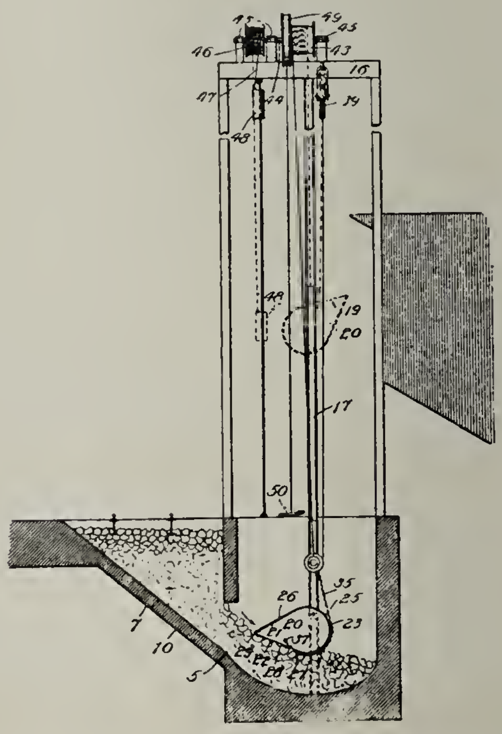
914,603. Paving-Rammer. Niels C. Qvist and Wilhelm H. Nordstrom, Horsens, Denmark. Filed Jan. 18, 1908. Serial No. 411,490.

A road making machine comprising in combination, a truck, a tamping hammer therefor, a rack connected with said hammer, gear segment meshing with said rack, means for operating said segment, and toothed gearing means for increasing the toothed portion of said segment to increase the stroke of said hammer.



A road making machine comprising in combination, a truck, a gravity acting hammer therefor, a rack connected with said hammer, a main gear segment meshing with said rack for raising and releasing said hammer, means for operating said main segment, and a plurality of auxiliary segments for increasing the toothed portion of said main segment.

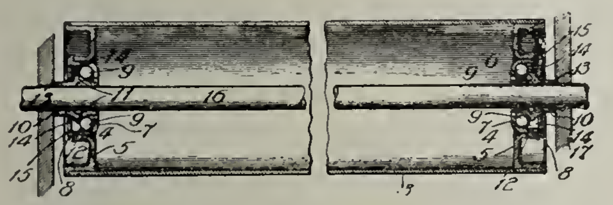
914,755. Conveyer Apparatus. Henry B. Sauerman and John A. Sauerman, Chicago, Ill. Filed March 28, 1908. Serial No. 423,945.



The combination of a guide, a pivoted scoop guided by said guide and containing an opening and a cutting edge adjacent thereto, and means having eccentric connection with the scoop ad operating when actuated to swing the scoop to upright position and in so swinging the same to first lower and then raise the said cutter-portion, as and for the purpose set forth.

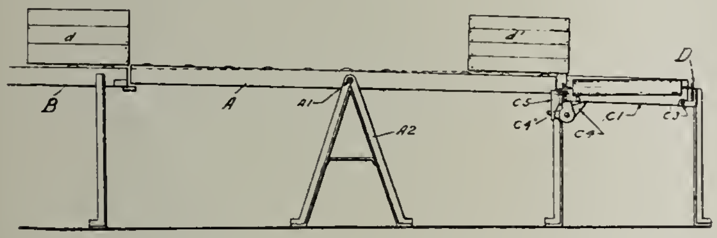
914,714.* Ball-Bearing for Conveyer-Rollers. Sigmund L. Goldman, Chicago, Ill., assignor to E. Goldman & Co. Inc., Chicago, Ill., a Corporation of Illinois. Filed May 11, 1908. Serial No. 432,260.

In combination, a tubular roller, ball-bearings in the roller-ends, each comprising a cup composed of an outer annular section of spring metal a separate annular section within said outer section and forming the ball-race, balls in said race, a cone-forming sleeve confining the balls therein, and a shaft extending in the roller through the roller-bearing sleeves, for the purpose set forth.



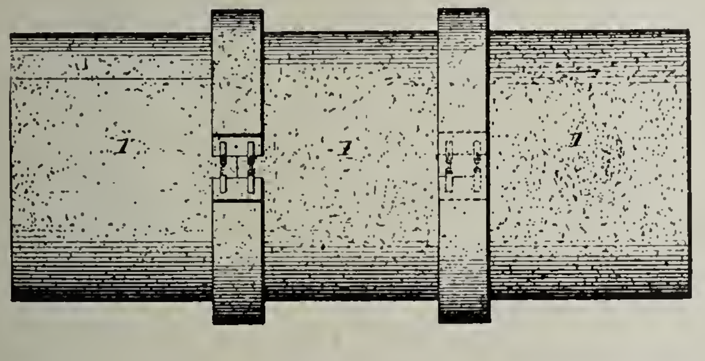
In combination, a tubular roller, ball-bearings in the roller-ends, each comprising a cup composed of an outer annular cupped section of spring-metal frictionally engaging the inner wall of the respective roller-end and provided with a flange abutting against said end, a separate annular cupped section of non-resilient metal forming the ball-race within said outer section and provided with a flange abutting against the same, a cone-forming sleeve confining the balls in the race, and a shaft extending in the roller through the roller-bearing sleeves, for the purpose set forth.

914,832. Automatic Gravity-Conveyer. Sten Hedrain, Chicago, Ill. Filed Sept, 22,1908. Serial No. 454,267.



The combination in an automatic conveyer of the transferring frame pivoted to a conveyer track, the bell cranks adapted to actuate the said transferring frame, the tilting section pivotally suspended, the vertically slidable bracket adapted to engage said tilting section, said slidable bracket actuating the bell cranks, substantially as described.

914,862. Tile. Joseph A. McKee, Jeffersonville, Ind. Filed April 24, 1908. Serial No. 428,927.

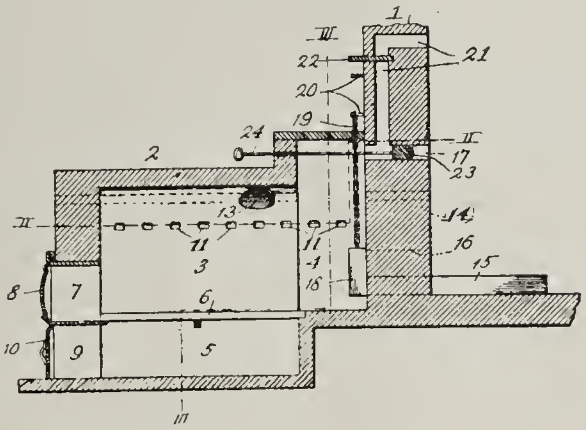


The combination with the tiles arranged with their ends abutting, of a fastening device for the tiles, said device comprising a plurality of substantially semi-circular sections of plastic material, each provided with a reinforce whose ends abutting, of a fastening device for the tiles, and device comprising a plurality of substantially semi-circular sections of plastic material, each provided with a reinforce whose ends extend beyond the ends of the sections, and are provided with an angular portion, and bolts traversing the angular portion for connecting the sections together, the inner faces of the sections being provided with a longitudinal depression for the purpose set forth.

The combination with the tiles arranged with their ends extend beyond the ends of the sections, and means engaging the ends of reinforce for drawing the sections together, the inner pieces of the sections having a longitudinal depression for the purpose set forth.

915,309. Brick-Kiln. Louis H. Reppell, Kansas City, Mo. Filed May 1, 1908. Serial No. 430,352.

In combination, a brick-kiln, a furnace adjacent thereto, a hot-air duct leading from said furnace into said kiln, a hot-air duct communicating with the first-mentioned one extending upward in the kiln wall and thence inward into said kiln, and a damper whereby one of said ducts may be closed independently of the other or whereby they may be simultaneously closed.



In combination, a brick-kiln, a furnace adjacent thereto, hot-air ducts leading from the upper portion of said furnace into said kiln, hot-air ducts communicating with the first-mentioned ones extending upward in the kiln walls and thence inward into said kiln, hot-air ducts leading from the lower portion of the furnace into the kiln, and dampers for independently controlling the upper and lower hot-air ducts, substantially as described.

◆

CLAY PLANT MANAGER AT BRAZIL WILL TAKE A REST

R. H. Morrish, of Brazil, Ind., general manager of the Chicago Sewer Pipe company, the Standard Pottery company, the Brazil Gas company and the Brazil Wire Fence company has sent in his resignation as the head of these four concerns and will retire from the management June 1.

Mr. Morrish takes this action on the advice of his physicians who have warned him that he must seek rest or suffer a breakdown in his health. Mr. Morrish has already laid his plans for himself and wife to spend the summer among the northern lakes.

After several months' rest Mr. Morrish stated that he would return to Brazil and engage in business for himself. As to the line of business he will engage in or further plans for the future, Mr. Morrish had nothing to say.

Mr. Morrish came to Brazil sixteen years ago as manager of the Chicago Sewer Pipe company when the clay industry was in its infancy here. This plant was built on the Page-Joyce company and later the company built the Standard Pottery factory. A few years later the same company built the Brazil Gas plant and less than two years ago it erected the Brazil Wire Fence factory. Mr. Morrish has had the management of the growing business of all of these plants.

CLAY RECORD.

PUBLISHED SEMI-MONTHLY BY THE

CLAY RECORD PUBLISHING COMPANY

Ninth Floor, Plymouth Building,
303 Dearborn Street,
CHICAGO.

GEORGE H. HARTWELL, EDITOR

SUBSCRIPTIONS

Send One Dollar bill or stamps for United States or Mexico and one dollar fifty cents for all other foreign counties.

Entered as Second-Class Matter, January 25, 1893, at the Post Office, Chicago, Ill. under Act of March 3, 1879

Vol. XXXIV. MAY 29, 1909. No. 10

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Drain tile are mortgage lifters for the farmers.

Use your little hammer for nailing lies, but don't be a knocker.

Hard luck is a machine for testing your friends, it separates the wheat from the chaff.

"Spend less time in envying your neighbors luck and a little more in trying to get some for yourself.

Advertising introduces the goods and paves the way for the salesman, with it you can thrive, without it you will fall.

It is human nature to be jealous of or knock a strong competitor, but remember the man you are talking to never finds your strong competitor doing any knocking.

Mr. Fitzpatrick says: "Few days pass by when there is not a blaze started in some one of our greatest skyscrapers in New York, Philadelphia, Chicago, etc. That incipient blaze finds nothing in the structure to feed upon or to damage, and it is quickly extinguished. Nothing is heard about it. There has never been a fire of serious magnitude in a really fireproof building. There cannot be, and that is why public attention has never been directed to that fact. The good, law-abiding citizen goes his way in peace, and you seldom read of his virtues; it is the criminal who gets the publicity. So it is with fire; it is the criminals, so to speak, among buildings that are destroyed.

"The expert knows, 'what is what,' and it is high time that the layman should be able to differentiate in at least the essentials of construction. He ought to know that granite and marble and stone and concrete and steel are damageable by fire, though not combustible. It must be evident to him that well-burned brick and terra-cotta and fireproofing tile are the structural materials best calculated to stand intense heat. He should see to it that the building he erects or is called upon to occupy has all its steel members thoroughly protected with hollow tile or brick; that there is the very minimum of wooden and other combustible finish; that the stairs and elevators are properly enclosed so that each story is a separate unit, and again that that story be cut up into smaller fireproof units; that the building is protected from external attack by having its windows of metal sash and wire glass; that there is ample water supply, hose, etc., for internal protection; in fine, that the building really is fireproof in the fullest sense of the word, and only in such a building will he and his goods and chattels be safe.

"Perhaps this is too much technical knowledge to expect of the layman. Then at least let him insist that the city authorities say in specific terms. 'This is or is not a fireproof building.' When we get our cities up to that point we will have begun the satisfactory solution of one of the greatest economic problems that confront us, one whose imperfect solution is costing us half a billion dollars per year. The greatest and most senseless single tax to which we unwisely submit."

◆

There is a movement about, backed by the National Brick Manufacturers' Association, to have New York state roads paved with brick instead of being macadamized. A committee called on Governor Hughes, and when asked what it would cost per mile to pave with brick, replied.

"It is hard to state what a mile of brick pavement will cost. It cannot be accurately estimated what a mile of macadam will cost, but relatively speaking the brick will cost from 10 to 15 per cent more than the macadam, what we suppose is that a properly constructed brick pavement eliminates the expense of repairs."

Macadamized roads are being constructed now at a cost of $10,000 a mile and it is doubted if brick pavement could be had for only $1,000 to $1,500 more, but still the brick pavement probably would be the cheapest in the end even though it cost half as much again or $15,000 a mile.

The use of brick in roadways outside cities is not an experiment. The board of supervisors of Erie county, with the consent of the State Engineer, has paved twelve or more miles of one of the main roads in Buffalo. This was done at the request of business interests and automobilists and the supervisors before acting satisfied themselves the larger cost of brick over macadam would be made up in part if not entirely by saving in maintenance in the country districts adjacent to Cleveland, Ohio, 120 miles of road have been paved with brick. The result has not only been to benefit Cleveland in trade but to increase the value of property all along the line of the improvement.

OBITUARY

A. A. Reynolds, tile manufacturer of Fremont, Ohio, fell from a wagon, landed on his head and suffered from a hemorrhage of the brain.

Michael J. Finn, treasurer of the Union Coal & Brick Co., and of the Holyoke Brick Company and for 45 years one of Holyoke, Mass., most active citizens, died at his home of pneumonia, resulting from injuries received in an accident. He leaves a widow and two children.

Alexander H. Russell, a well known brick manufacturer, died at his home 1613 Eutaw Place, Baltimore, Md. He was 70 years of age and in the brick industry all his life. For many years he was president of the Burns & Russell Company, the firm being established by his father in 1818. His widow and two sons and three daughters survive him.

FIRE! FIRE!! FIRE!!!

The Koller Tile Works at Pana, Ills., was visited by a fire supposed to be the work of incendiaries. The loss is about $3000 partly insured. The plant was owned by Antone Koller, a retired business man.

Fire of unknown origin in the Western Pottery Mfg. Co.'s plant at Ellsworth and South Jason streets, Denver, Colo., did damage to the extent of $3000.

The Brick & Tile Works at Colchester, Ill., owned by Lee McClure caught fire and burned to the ground. The loss is total as no insurance was carried on building or its contents. He had just finished building the factory and had only run a half day.

The tile factory at Middleburg, Ohio, owned by John Koch, was destroyed by fire causing a loss of $2500, with no insurance.

The Sandstone Brick & Lime Co.'s plant located on Whidby Island, near Clinton, Wis., was completely destroyed by fire causing a loss of $80,000, insured for $20,000. The main office is in Seattle, David Zerwekh is president. The plant will be rebuilt inside of three months. The plant was a new one, making silica brick, completed in October.

THE CAMDEN PLANT TO BE SOLD

The Camden Clay Company which has a large plant at Spilman, Mason county, W. Va., and in which B. D. Spilman was largely interested has made an assignment. By reason of the removal from West Virginia of Mr. Spilman one of the large stockholders of the concern it decided to liquidate the indebtedness of the company and close out its business. In order to carry this out the company has assigned to M. G. Tyler, trustee, for the benefit of all the creditors. Mr. Tyler has in the past been in charge of the Spilman plant and was as capable a man as could be found. It is understood that the assets of the company outside of the plant and the real estate are in excess of its liabilities and the stockholders pursued the above course of closing out the business as a means of convenience. The company has done a large business in this section and it is to be hoped that a new company will purchase the plant and continue the business.

It is understood that the plant of the concern at Spilman will be sold as soon as can be conveniently done.

ACCIDENTS, DAMAGES AND LOSSES

The Athens (Texas) Brick Works was considerably damaged by a wind, hail and rain storm.

Lightning struck a shed at the Snyder Brick Works, Lima. Ohio, in which workmen were gathered to get out of a storm, knocking three unconscious, one fatally burned.

Alleging negligence and faulty construction of a kiln, the executor of Anthony Williams is sueing the Holt Brick Co., Montgomery, Ala., for $5000 for his death.

The Rich Hill (Mo.) Brick & Tile Works, was considerably damaged by the winds and storms so much so that the plant had to be shut down until the repairs are made.

Two men were killed and three fatally injured by an explosion of dynamite in a shanty of the Fredericksburg (O.) Terra Cotta Works.

The Union Potteries Co., East Liverpool, O., have been declared bankrupt. The company has made a five years' struggle against the bankruptcy act.

The Clymer Fire Brick Co.'s drum house at Indiana, Pa., was wrecked by an explosion of 50 pounds of dynamite in the power house. The plant was obliged to close down throwing 80 men out of employment.

J. G. Cross, superintendent of the Seminole Pressed Brick Co., Jacksonville, Fla., shot and killed his friend Robert Aldrick, taking him for a burglar. Mr. Cross is grief stricken because of his deed.

The Camden Clay Co., manufacturers of clay goods at Spillman, W. Va., has made an assignment, with M. G. Taylor as trustee. The plant employs 275 men.

Attachment suits have been entered against Wm. A. Shoemaker, who owns and operated the brick plant at Ellis, Muskingum Co., O. The plaintiff in twelve of the suits are workmen asking for their wages.

WRECKED BRICK PLANT BY USING DYNAMITE

Some one who evidently held a grudge against the successful Clymer Fire Brick Co., at Clymer, Pa., committed an act of wanton destruction by wrecking the plant and thus causing it to suspend operations for several weeks. Ex-State Senator John S. Fisher and Henry Hall, directors of the company, place the loss at $500, but this is the small figure considering that 75 men will be idle several weeks and a half dozen large contracts are thrown back.

The miscreants broke into the company's magazine house and stole 150 pounds of dynamite kept there for blasting purposes. They then placed the dynamite under the drumhouse, where the machinery is operated that runs an inclined tramway from the clay beds to the mixing house. A few sticks of dynamite were also secreted under the track and then the explosives were discharged. The resultant explosion blew the drum house and its contents to atoms and wrecked a part of the tramway.

Senator Fisher visited the wrecked plant, but could find no clue concerning the men who fired the dynamite. No one is known to have had trouble with the managers and why any person should partially destroy a prosperous industry is a mystery. Steps were at once taken to rebuild the wrecked power house and track and the company hopes to hold all its orders. In the meantime the authorities have been asked to investigate the explosion.

FIREPROOF CONSTRUCTION

Building records of the country show that the total of new construction done in the 51 leading cities during 1908 amounted to $546,467,390; the building record in the same cities for the past month of March was nearly $64,000,000, just about twice what it was for March, 1908. A goodly proportion of this later work was built or is being built fireproof.

Considerable reinforced concrete work is being done, yet fully 70 per cent of the fireproofing executed is the old, standard steel-hollow fireproofing tile blocks. Referring to this difference in materials one of the highest authorities in the land, writing in the current issue La Follette's magazine, says that all columns and girders about a building should be covered with such tile fireproofing and that the floor arches and partitions should also be of brick or tile, but that: "In lower buildings if you insist upon it and believe that by prayer and much wakeful attention you can supervise every detail of it, then use reinforced concrete. At the very best, in its most perfect state, it is an extra hazardous material with which to work, subject to all the ills of other materials and uncountered ones of its own....."

On this same subject, Mr. J. K. Taylor, the Supervising Architect of the Treasury, and who does more work every year than most of the architects put together, says in a signed communication to a concrete journal: "....It is either good or bad. The material is peculiar in that sense and differs from others as a somewhat indifferent piece of brickwork could be allowed to stand without endangering the structural strength of the building, but an indifferent piece of concrete is a menace to the lives of the occupants...." He further states that the Department refrains from using concrete in many instances where it could advantageously be adopted, "not because of any prejudice against it, but simply of the fear of disastrous results from faulty or dishonest workmanship."

GRAND RAPIDS BOARD OF WORKS WILL NOT GO INTO BRICK BUSINESS

E. H. Christ's paving brick plan has gone by the board. For a long time Mr. Christ has been laboring with a problem, the solution of which he believed would be a benefit to the contractors and the city of Grand Rapids, Mich., alike. He thought it would be a fine thing for the city to secure bids on paving brick, submit these bids to all of the contractors who wished to go after municipal work.

This would allow each contractor a chance to get into the game. At present the brick companies make no secret of the fact that they will give prices only to a few contractors in each city. They explain that this is necessary in self-protection.

When the specifications and requests for bids were sent out several weeks ago, five proposals and five communications in which the plan was rejected were received. In the communications the project was condemned in no uncertain terms. The Bessemer Limestone company, the Trimble Brick Manufacturing company, the Carlyle Paving company, the Metropolitan Brick company and C. H. Doan company refused to enter. The five bids were from A. B. Knowlson, Saginaw Paving Brick company, Michigan Paving Brick company, the United States Brick company and the Indianapolis Paving Brick company.

In addition to the condemnation of some of the large brick concerns, City Attorney Taggart hit the plan a body blow by declaring it illegal for the city to foster a monopoly by singling out a certain brick and compelling contractors to use it. After a consultation with Mr. Taggart, Mr. Christ requested that the bids received be returned unopened.

BAUXITE PRODUCTION IN THE UNITED STATES LARGE DECREASE IN 1908

According to the Geological Survey reports the bauxite industry in 1908 was still suffering from the effects of the depression of the preceding year. The production for 1908 was 52,167 long tons, valued at $263,968, a reduction of about 47 per cent in quantity and 45 per cent in value. Little or no prospecting or development work was done, despite the fact that numerous new deposits were discovered. The list of producing States is still restricted to Alabama, Arkansas, Georgia, and Tennessee. As in the past, Arkansas leads, producing more than 60 per cent of the total, and this notwithstanding a decrease of about 43 per cent in its production. In Tennessee only one firm is engaged in bauxite mining.

DEPOSITS IN DIFFRENT STATES

The Virginia deposits of bauxite are in Botetourt County, about 2 miles east of Troutville, in the western of the two old iron and manganese mines at Houston. The ore occurs with the iron and manganese in bright-colored red, orange, brown, and pink clays lying on partly decomposed sandstone, "horses" of which extend upward into the clay. Commonly the manganese occurs in the horses and the iron and bauxite are found in the clays, the manganese and iron being in the shape of irregular fragments and the bauxite in scattered masses. As the clays are only 15 to 30 feet deep, the ores are shallow.

In Georgia, in addition to the old deposits, a new field has been found in Wilkinson County, 30 miles from Macon and 150 miles from the workings in the northwestern part of the State. The bauxite occurs in the form of flat beds up to 10 feet thick resting on Cretaceous clays or as nodules disseminated through them. According to Mr. Otto Veatch, of the Georgia Geological Survey, the mode of origin of the mineral is obscure. A number of occurrences has been reported, but no development work was done in 1908.

The newly found Alabama deposit is located near Fort Payne, Ala. An open cut has been dug and a 50-ft shaft sunk but so far as is known no ore has been shipped, though a few tons have been taken out.

In Tennessee no work was done except at the Perry mines, near Chattanooga. Work was done at various points in the Georgia-Alabama field, but the falling off in the demand in 1907-8 prevented any great amount of it. The Georgia production decreased somewhat and the Alabama production increased correspondingly.

The Geological Survey's report on the bauxite industry, by W. C. Phalen, will soon be ready for distribution and may be obtained free of charge by applying to the Director of the Survey at Washington, D. C.

WORKMAN WALK OUT

Owing to the employing of a party of Greek workmen at the roofing tile factory at Coffeyville, Kansas, the old employes walked out. They refuse to work with these foreigners because they do not feel that they can fairly compete with these laborers and further that there are plenty of Americans here to fill the positions at the factory.

Several of the workmen would have stayed with the factory if allowed to work separately and have separate drinking cups but these the employers denied, according to one of the employes.

MAKING EXTENSIVE IMPROVEMENTS

A visit to the Yoke Vitrified Brick Company's plant would convince the most skeptical that brick making has been perfected to a science. Of late the plant has been entirely reconstructed.

The plant as it stands now, Coffeyville, Kansas, can feel proud of. Still the new management contemplates many additional improvements. The latest addition to the plant is a new steam shovel.

The machine is specially designed, suitable for the hard blue shale the Yoke company owns. To give a better idea with this immense shale digging machine is, it can be comprehended by its weight, which is approximately 160 tons. It will have a 70 foot boom, and will cut in height about 60 feet, and a breast cut of 140 feet. Its shale digging capacity is for 800,000 brick a day. The company is said to also have the best steam power plant in all Kansas, consisting of a battery of 650 horse power, water safety tube boilers, and a 650 horse Corliss engine, of Allis manufacture.

There is also a 100 horse power electric light engine and equipment to light the plant by electricity. The whole plant is to be increased in capacity, several new additional presses are now being built, and are expected to be ready for installing by the middle of June. The works are now running full force, over 100 men being employed. The work is conducted on the eight hour system. The laboring wages this company pays is $2, and upward for eight hour day.

The company has some very large orders on hand. Many of the brick are fine facing brick. The present president of the company is Mr. Robert Binder, the general superintendent, F. P. Meyernberg

CORNING COMPANY BUILDING KILNS AND INCREASING OUTPUT

The Corning (N. Y.) Brick, Terra Cotta & Tile Company is building three new brick kilns on its property just over the river. The new kilns are being constructed where the old city dumping grounds formerly were. One of these kilns is nearly completed and will be ready for use in about two weeks. The other two will not be completed for some time yet. They are about one-third larger than the old kilns and when done will increase the output of the plant about 25 per cent. The output of the company at present is about 600,000 paving blocks per month and with this additional capacity they will be able to put out about 750,000 of these paving blocks, which are twice as thick as an ordinary brick, in a month. These two kilns will not necessitate the employment of any more men as the present working force will be sufficient to fill the need. This plant has been working full time through nearly all of the financial depression, employing at the present time 150 hands.

These new kilns are to be models in regard to all modern improvements, etc. They will be fitted with improved draughts and all of the latest contrivances for brick kilns.

The company recently constructed and completed an absolutely fireproof kiln for drying brick. This new kiln is so arranged that it utilizes all the waste heat from the cooling kilns, and the exhaust steam from the engines.

The Corning plant recently received an order for a large quantity of wire cut faced brick for the new Onondaga Hotel at Syracuse. These are a kind of brick prepared only by the Corning Company and they will be used in the facing of the new $1,000,000 hotel.

SAFER BUILDING REQUIRED

New York, May 25.—Until comparatively recently pretty nearly all kinds of buildings were tolerated in our cities, so that to-day we have a hodge-podge medley of highly combustible and dangerous buildings, interspersed among which are a few, very few, fire resisting and first-class structures, not over 8,000 in our total of over 12,000,000 buildings in the country.

Of late years building ordinances have been enacted in most of our cities but they have been rather lax and still more laxly enforced. Wood has been too freely permitted, inferior construction has been allowed in too high buildings, so-called "slow-burning" construction has been permitted and far too great latitude has been given the exploiters of the various reinforced-concrete systems to experiment with their untried and often most questionable expedients in the name of economy. Endless troubles and sometimes disasters have resulted. For instance, the too liberal permission to use wood was the very direct cause of the appalling losses by fire in Baltimore, San Francisco, and likewise in the devastating lesser fires of more recent date

The authorities are awakening to the necessity there is for more stringent legislation. New York has taken the lead in revamping its building ordinances and the other cities will undoubtedly soon follow suit. New York's Building Code Commission has completed its labors and evolved a splendid schedule of requirements. It limits the heighth of combustible buildings to three stories in congested districts, it limits likewise all constructions of other than absolutely fireproof materials to safe heighths so that they can be easily handled by the fire-departments in case of fire, and it recognizes as standard fireproof construction buildings erected of steel frame protected with hollow fireproofing tile, a system that has been in vogue for thirty years and has stood satisfactorily every fire to which its properly assembled parts have ever been exposed. With few exceptions the leading architects and engineers of the country thoroughly approve of the new code proposed for New York, and contend that in building laws as in the divorce laws, for instance, there should be uniformity in all states. It would be a very great advantage to the entire country if the state authorities, rather than the city, would adopt New York's building code and make it uniform and obligatory in all the cities of each state.

PRISON KILNS PRODUCE 400,000 BUILDING BRICK

The First of the Product of the New Plant is Now Available for Use in the Addition of Pen's Walls.

The Leavenworth, Kansas, Times says:

"Two brick kilns were opened at the Federal prison yesterday and over 400,000 fine building brick were uncovered and ready for use. These are the first brick made in the new yard with the pressed brick machinery. One kiln contains 130,000 while the larger contains 175,000. The brick will be used for building the walls about the brick yard and the administration building. 'This is the first product from the new yard,' said Warden McClaughry last night, 'and it is the finest brick made. There is not a bad or disfigured brick in the whole kiln.' 'These brick will be used to build the administration building,' explained C. K. Macey, chief clerk of the prison."

The plant of the Federal prison was equipped throughout by the American Clay Machinery Company, of Bucyrus, Ohio. All the machinery has been working in a satisfactory way according to the management and as will be seen by the above the quality of the products is unsurpassed.

POTTERY TRADE REVIEW

East Liverpool, O., May 24.—When the annual report of President Thomas J. Duffy, of the National Brotherhood of Operative Potters, is read at the annual convention in Atlantic City next July, it will show that fewer differences have existed between workmen and employers this past year than ever. Seldom, indeed, has it been necessary for the head of the organization to assume the role of arbitrator in the pottery world during the past year. The season has been one of marked harmony, notwithstanding the fact that here and there some manufacturers and workmen would have a talk over the price for the making of this or that article, but in the end it would come out all right for all parties concerned.

No new locals have been organized during the past year. There are about sixty locals in the ranks of the brotherhood now. At the annual convention these locals will be represented by from 110 to 115 delegates. No resolutions have reached brotherhood headquarters so far, although the various locals have appointed committees to draft these. When the committees complete their framing up of the resolutions, they will have to pass the inspection of the local before the secretary is authorized to forward them to the national officers. This done, then the brotherhood officials take a blue pencil and go over them. It often happens that when a resolution reaches headquarters it is marked out, for the same question is covered in some other rule or law that has existed for years, but has escaped the eye of the local seeking to introduce it.

A meeting of the western standing committee was held here last Monday night, but the report of the session has not been made public so far. This committee has had more work to do this year than ever. In the past when questions would arise in a shop, the matter was taken up in the local for settlement. Not so now. Locals gently pass the proposition up to the standing committee, and this is why the work of the committee has been heavier this year than ever before.

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RIVERSIDE HAS $50,000 FIRE BRICK PLANT

Riverside, May 19.—The Alabama Brick Manufacturing company was incorporated last Wednesday at this place for the purpose of making fire brick. The company is capitalized at $50,000 and has secured the titles to 40 acres of fire clay land with a depth of 30 to 40 feet of clay right on the Southern railroad.

The plant will give work to some 75 or 100 men and will be in operation as soon as possible. A great demand for this product is anticipated as the fire brick made by this company as shown by the analytical chemist's analysis will withstand 300 degrees Fahrenheit, a greater heat than any blast furnace, steel plant, rolling mill or glass works in the country, and after getting in operation it will not be necessary to import fire brick from Pennsylvania, Ohio of Kentucky. This is only the beginning of other great enterprises, as this section has an abundant amount of iron ore and other minerals in inexhaustible quantities that will induce capital to invest here.

BRICK COMPANY BOYCOTTS PORTLAND

Portland, Oregon, has been boycotted by the Denny-Renton Clay & Brick Company of Seattle. This company is the only one in the Northwest it is said which manufactures a first-class vitrified brick, and Portland has been liberally patronizing it for several years past. In fact nearly all the brick used in street work in this city has been purchased from this firm.

The recent boycott instituted against Portland is due to the fact, it is said, that this company was not awarded certain contracts for street paving in this city. Becoming angry, the members of the company decided to teach Portland a lesson and it is said that not one brick for work in this city can now be purchased from this firm.

As a result bricks for gutters and other such work cannot be had and the city authorities and the local contractors find themselves face to face with a serious situation. But they have determined not to be outdone by the Seattle company. Instead of using vitrified brick for gutters and such like, concrete will be substituted.

It is said that it will be but a short time before a factory for the manufacture of vitrified brick, will be established in this city. Steps have already been taken to organize a company, it is said, to furnish this product. The reason such a factory has not been installed in this city before is said to be due to the fact that no good quality of shale for the manufacture of the brick could be found in this city, but the desired shale will be shipped in from other sections of the country.

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BERKS COUNTY BRICKMAKERS BUSY

The starting up of several of the brick plants in Berks county, Pa., within the past few days has caused a demand for several hundred men, who will be busy up to November, when the kilns will go out of service again.

The Reading Shale Brick Company, at Wyomissing, which has been shut down for several weeks, began operations again with a large force of men. This plant will turn out about 30,000 finished brick a day.

Moyer & Company's brick yards at West Reading have been put in operation, and this company has been turning out 40,000 of the finished hand-made brick each day. Simon Kline's plant at West Reading; the Glen-Gery Company's plant, at Shoemakersville; the Hamburg Brick Company's plant, and the Auburn Shale Brick plant, are all in operation. About the only plant in this section not running, is the Montello, and the indications are that these yards also will be started.

The Berks county output of brick per day is several hundred thousand.

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STATE'S CLAY PRODUCTS TO BE EXHIBITED AT FAIR

State College, Pullman, Wash., May 25.—"Clays and Clay Products of Washington," will be one of the exhibits sent to the A.-Y.-P. exposition by the state college department of geology. All the principal clays of both Eastern and Western Washington, and products made therefrom will be included in the exhibit.

POTTERY NEWS ITEMS

Greenwood Pottery No. 3, Trenton, N. J., has started operating, the potters feel that the tariff schedules will not be seriously molested.

The Lambertville (N. J.) Pottery Co. has just begun actual work in turning out orders. The entire plant is new and constructed of brick on concrete foundations. Those interested are George E. Pauck, Andrew Foltz, and Philip J. Faherty, all experienced in their various lines of business.

The Coosada Pottery Co., has been started, and will use the white clay at Coosada, Elmore Co., headquarters at Montgomery. W. D. Hall is interested. Additional new machinery will be installed.

J. B. Owens has bought the personal property of the Zanesville (O.) Tile Co., which is in the hands of a receiver. The property was scheduled at $30,000 and sold at $5,500.

The Brazil, Ind., Factory Club has closed a contract with capitalists of Northern Indiana for the erection of a $250,000 plant for the manufacture of porcelain ware. The plant will be erected at once in the southeast part of town.

Nicholas Zimmerman, foreman of the Gerber Pottery at Cannelton, Ind., has resigned and Oscar C. Lee of Evansville takes the place.

William H. Griggs, formerly manager of the Taylor, Smith & Taylor Pottery at Chester, W. Va., is now the general manager of the Anchor Pottery Co., at Trenton, N. J. He will remove his family from East Liverpool, O., to Trenton in the summer.

WANTS MACHINERY FOR MAKING VITRIFIED BRICK

An American consular officer in Latin America reports that the mayor of the city in which he is located has under consideration a plan for paving the streets with vitrified brick and has requested him to furnish the names of firms in the United States exporting machinery used in the manufacture of this article. The consular officer suggests that American firms furnish the inquirer direct with all available information on this subject as soon as possible, and also sent catalogues in duplicate to his office for reference purposes.

Write to Bureau of Manufacturers, Washington, D. C. and refer to inquiry No. 3439.

RATE ON GROUND CLAY

Austin, Tex., May 27.—It is ordered that Commodity Tariff No. 9-B, issued by the commission to apply on stone, sand, gravel, etc., transported by railroads between points in Texas and effective Jan. 7, 1904, be amended by adding to Section 2 thereof the following:

Note—Ground clay in bags, in carloads, minimum weight 30,000 pounds per car, transported between points on the Galveston, Harrisburg & San Antonio Railway; Texas & New Orleans Railway, Houston & Texas Central Railroad, Houston East & West Texas Railway, Chicago, Rock Island & Gulf Railway, Missouri, Kansas & Texas Railway of Texas; Trinity & Brazos Valley Railway, St. Louis, Brownsville & Mexico Railway; Gulf, Colorado & Santa Fe Railway; International & Great Northern Railroad, Fort Worth & Rio Grande Railway and St. Louis, San Francisco & Texas Railway, locally and jointly will take same rates as above provided for kaolin and fuller's earth.

This order in effect May 20, 1909.

SAND OR LIME BRICK OR BLOCK NEWS

The Menominee (Mich.) Brick Co. is now operating their plant to its fullest capacity.

The Lake Superior Sandstone Brick Co., Calumet, Mich., are now operating their plant at Ripley to its fullest capacity. They have orders ahead for the complete output.

The plant of the Denbigh (N. Dak.) Pressed Brick Co., is running night and day and are now turning out 25000 sand-lime brick daily so as to keep up with the orders.

The Davisburg (Mich.) Concrete Tile Co., composed of J. W. Stephens and L. H. Trephagan have just commenced the season's work with large orders of three feet tile.

The plant of the Grand Rapids (Mich.) Brick Company on Kalamazoo Ave., is practically completed and is expected to begin operations at once, $40,000 was expended in the plant.

The plant of the Watertown (N. Y.) Sand Brick Co., has been sold to B. W. Aldrich, cashier of the Theresa Bank, possession has been assumed and brick making will begin at once.

The Concrete & Clay Products Co., Philadelphia, Pa., has been incorporated with $500,000 capital stock. The incorporators are William Flint Jr., Charles H. Bellemy and Henry E. Smith.

The Jackson (Mich.) Pressed Brick Co., has started their plant for the season, L. S. Anderson the manager states that the delays were made on account of awaiting for equipment for the lime crusher.

The St. James (Minn.) Tile Co., is manufacturing cement tile brick and blocks doing a business of $70,000 yearly. The factory is now being enlarged, A. W. Schweppe is the president and general manager.

The Flint (Mich.) Cement, Tile & Brick Co., has filed articles of incorporation with $5000 capital stock. John G. Frank is president, John C. Vogel, vice-president, and John Washer, secretary and treasurer.

The Washington Brick Co., New York, has been incorporated with $500,000 capital stock. Incorporators are Alexander H. Jackson, 2 Rector St., Robert A. Osborn, 25 Broad St., and Wm. W. Mumford, 2 Rector St.

The Carey Concrete Co., Grand Rapids, Mich., has been incorporated to make concrete brick with $10,000 capital stock. The officers are W. H. Carey, president and manager, F. J. Wood, treasurer and R. L. Nash, secretary.

The silicated brick plant of the Sandstone Brick & Lime Co., located on Whidby Island, near Clinton, Wash., is to be rebuilt at once. An $80,000 fire completely destroyed the plant. By July 15th president David Zerwekh thinks the plant will be in operation again, Seattle is the home office.

A stock company with $10,000 capital will build a cement drain tile plant at Grayville, Ill., A. H. Vayo and C. D. Russell of St. Paul, Minn., are interested.

WON'T HAVE TO PAY FOR GAS BURNED

Guthrie, Okla., May 24.—The Cleveland Vitrified Brick company will not have to pay for the gas which is burned during the first six months it was in Cleveland, under a decision of the Oklahoma supreme court today. As an inducement to the company to locate in Cleveland, an agreement was made by the Minnetonka Oil company, which furnishes Cleveland with gas, to give it free gas for the first six months. This agreement was made by the general manager of the company, the only stockholder residing in Oklahoma, and approved by the president. Other stockholders of the company thought they had exceeded their authority and brought suit against the brick company for the gas it had burned. The court decides that they acted within their authority and affirmed the district court of Pawnee county in an opinion by Justice Williams.

MISCELLANEOUS ITEMS

Work has been resumed at the Lancaster (N. H.) Brick Co.'s works for the season.

Hess & Balzer, of Point Pleasant will establish a $10,000 brick plant at St. Albans, W. Va.

Schneider Bros., of St. Joe, La., has purchased the brick yard at Nicholson, Miss., of Gus. A. Kampman.

Frank Graham has purchased 8 acres of bench land at Emmett, Idaho, and is making 10,000 brick daily.

The owners of the Industry (Ill.) Brick & Tile Works, have started their brick and tile works for the season.

Did you read about The Marion Flue Blower in the last issue? It's a saver of fuel, read about it on page 41.

L. S. Bowser, of New Salem, has bought property at Richardton, N. Dak., and expects to start a brick yard this summer.

The Monongahela (Pa.) Clay & Brick Co., has been awarded a contract to furnish 1,000,000 brick for coke ovens at Bentleyville.

Architects and contractors are united in the opinion that a common brick manufacturing plant would be a good paying proposition.

The Washington (Ga.) Brick Co., has been incorporated with $40,000 capital stock, by O. S. Barnett, A. C. Barnett and W. A. Slaton.

Frank Bowyer states that the projected brick plant for Chillicothe, O., is a go. The plant is to be east of the city, on the B. & O. S. W. tracks.

The Tuscaloosa (Ala.) Brick Co., will install $3000 worth of brick machinery which has been already purchased, A. McRae, 1214, 26th St., is the manager.

Read about the Schurs oil burners on page 42. Burners for all kinds of kilns are manufactured by John Schurs who has had years of experience in this line.

R. A. Masterson, of Manchester, Ohio, is trying to interest local capital in a paving brick and sewer tile plant at Vincennes, Ind., where he has found the proper shale.

The Harbison-Walker Refractories Co., as evidence of improved conditions states that the Portsmouth, O., plant has increased its capacity and will put on night shifts.

The Great Eastern Fire Clay Co., brick and terra cotta makers at South River, N. J., use the Wilson Kilns to burn their most excellent ware. Read about them on page 45.

The Missouri Shale Brick Co., Kansas City, Mo., has been incorporated with $175,000 capital stock. Incorporators are Joseph S. Waller, O. L. Kaempff and F. C. Kaempff.

The Brooklyn (Ind.) Brick Co., has just installed $20,000 worth of new machinery enabling the company to increase the capacity of the plant, machinery is now in operation.

The Kramb Brick & Tile Co., Oak Harbor, O., has been incorporated with $15,000 capital stock by A. E. Ballin, C. H. Kramb, J. E. Kramb, A. J. Kramb, W. P. Kramb and H. C. Kramb.

The Jeffersonville (Ind.) Brick Co., has been awarded the contract to furnish the Indiana Reformatory with 1,000,000 brick at $5.50 per thousand with which to build additional buildings.

B. W. Bennett, of Muncie, Ind., has secured an option on 30 acres of land adjoining the plant of the Brooklyn Brick Co., at Brooklyn, Ind., with a view of establishing another plant there.

The plant of the American Vitrified Brick Co., at Caney, Kansas, was started on the 20th in the presence of the officers and many of the stockholders. It was a grand opening day, luncheon was served, O. A. Kentner is president of the company.

Two new kilns have been built at the Loda (Ill.) Brick & Tile Company works costing $2,000.

The Pine Grove (Pa.) Vitrified Brick Works has started operations after several months of idleness.

Robt. L. Graveley, box 344, Pensacola, Fla., wants to purchase a second hand brick machine of small capacity.

The Vernon (Ala.) Land, Improvement & Brick Co., has been incorporated with $10,000 capital stock by O. D. Pennington and others.

The Hillsboro (Texas) Board of Trade is interesting itself in the establishing of a brick making plant at that place, A. L. Blanchard is secretary.

C. B. Thomas has purchased the plant of the Thomaston (Ala.) Brick Co., and equipped same with new machinery making 20,000 brick daily.

The Refractory Fire Brick Co., with $350,000 capital stock by J. L. Cohogan of Washington, Pa., E. L. Squire and G. W. Dorsey, of Wilmington, Del.

The National Coal & Brick Co., of Upper Sandusky, O., has taken over the property of the Mohr-Minton Coal Co., at McArthur, O., and will operate the plant at once.

The Alabama Fire Brick Mfg. Co., Riverside, Ala., has been incorporated with $50,000 capital stock, H. C. Alford is president, J. T. McAllister, 2026, 1st Ave., Birmingham, is the promoter.

The Yoke Vitrified Brick Co., Coffeyville, Kansas, elected new officers as follows: Robert Binder, John F. Weaver and F. P. Meyenberg, of Coffeyville, John E. Bird, Fred B. Wood and D. W. Knapp of Adrian, Mich.

United States Clay Co., Indianapolis, Ind., has been incorporated with $2,500 capital stock. Incorporators are John R. R. Lindner, E. P. Phillips, F. M. Dugger, W. T. Brown and Samuel W. Keene.

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

The Gate City Tile Co., has been incorporated by Amanda Bowen, M. N. Hill and John E. Bowen.

Contractor R. E. Wright has workmen engaged in the installation of a brick manufacturing plant at Columbia, La.

J. G. Kapler's Brick Works at Giddings, Texas, has been started and he will soon be making 20,000 pressed brick per day.

The Clinton (La) Brick Mfg. Co.'s plant which recently burned has been rebuilt and the plant ready to commence work.

The Mound Valley (Kansas) Vitrified Brick Co., have decided to sell their brick plant on account of not being able to get gas.

W. H. Jones Brick Co., is the style of a new company that has started making brick at Macon, Ga. Edward Cox is the superintendent.

J. N. Moffatt has purchased A. E. Carlander's interest in the Cooperstown (N. Dak.) Tile Works and will proceed to manufacture tile.

The Hollendale (Wis.) Brick & Tile Co., have started their machinery in their brick works. The plant represents an outlay of $50,000.

E. M. Eby of the Wellington, (Kansas) Construction Co, is testing the shale and clay found there and if it proves satisfactory will build a plant.

The Corning (N. Y.) Brick, Terra Cotta & Tile Co., are building three new large kilns so that their brick department will be enlarged 25 per cent.

The Blackhawk Clay Mfg. Co., have installed a steam shovel in their clay pit at Sears, Ill., so as to increase their capacity and be abreast of the times.

The Alaska Clay Works Co., Alaska, Walworth Co., S. Dak., are producing 100,000 feet of gas daily from a deep well and will soon commence to make brick.

The Sherman Brady Brick Co., Houston, Texas, has been incorporated with $40,000 capital stock. Incorporators are S. S. Brady, W. S. Hunt and W. E. Kendall.

The Hobbs Drain Tile Co., Hobbs, Ind., has been incorporated with $15,000 capital stock. Directors are Peter O. Duncan, Stanley M. Cotton and Della P. Cotton.

A. Von Pressentin of Bellingham has 160 acres of shale in Skagie Co., near Rockport, and with the Chamber of Commerce is trying to establish a $100,000 paving brick plant.

The Dunn Wire Cut Lug Brick Co., Conneaut, O., has been incorporated with $75,000 capital stock by Frank B. Dunn, Geo. B. Whitney, A. W. Pelton and T. T. Zininger.

The Sioux City (Ia.) Brick & Tile Works have started to rebuild their Springdale plant which was destroyed by fire early in the month. They expect to again be making brick in 30 days.

Ebenezer Williams has taken over the Newfield, N. Y. brick yard of the Inter State Conduit & Brick Co., of Scranton, Pa., and will make improvements to the extent of $50,000 and will operate same.

The Spokane (Wash.) Pressed Brick Co., has been incorporated with $15,000 capital stock. The incorporators are William Hoare of Tekoa, John L. Trone, V. W. Basch, James F. Elliott, W. H. Stowell, A. E. Gallagher and J. T. Oma, all of Spokane.

The Adams Coal and Clay Co., Birmingham, Ala., is now considering the building of a clay plant in Jefferson Co., or at North Birmingham for the manufacture of all kinds of building clay products, the material being taken from the mines on the Warrier River.

The Washburn Bros Co., Saugerties, N. Y., one of the largest brick making plants on the Hudson is having the yards wired for the installation of a system of electric lighting so as to work nights. The company has 18 machines at work and recently purchased the corse yard.

The machinery has arrived at Shoshoni, Wyoming for the brick works. A gasoline engine will furnish the power.

Robert Nesch and Henry Nesch of Pittsburg, Kansas, are considering the establishment of a brick plant at Sapulpa, Okla.

The Federal Betterment Co., Cherryvale, Kansas, has made connections with a new gas line and is now burning brick at their plant.

The Red River Brick Corporation, Grand Forks, N. Dak., has started making brick in two of their yards. The outlook for the year is excellent.

The Southwestern Brick Co., Cherryvale, Kansas, is overhauling its plant and expects to have everything in readiness to begin burning brick soon.

The new brick works at Morrill, Nebr., is now manufacturing brick of first class and is now running full blast with a heavy demand for the product.

The Sardinia (S. C.) Brick & Tile Co., has been organized with $5000 capital stock, J. E. Cousar is president and L. B. McFaddin, secretary and treasurer.

The Enterprise White Clay Co., 147 East State St., has been incorporated with $10,000. The incorporators are M. G. Oliphant, Alexander Trapp and Marvin A. Spaulding.

Dr. Thomas of Lucasville, O., and Elinore Oakes, of Portsmouth, are erecting a building brick plant at Lucasville on property owned by Dr. Thomas, the plant will be on the N. & W. Ry. tracks.

The Slater Brick & Tile Co., Billings, Mont., which has been undergoing a thorough overhauling is now in operation. The company is swamped with orders. August Bonnot is the new superintendent.

Forty employes of the Curtisville (Ind.) Tile and Brick Co., went on a strike for a raise in wages of 10 cents per day claiming other factories in that section were paying $1.50 per day. The matter was compromised.

The Queen's Run Fire Brick Co., Lock Haven, Pa., will build a large plant at DuBois. The officers of the company are engaged now with the engineers who have been preparing the plant for the preliminary work.

The Northwestern Brick & Tile Co., Dreary, Idaho, has been organized with $15,000 capital stock and will start the erection of a plant at once, having same ready for operation by September. The organizers are J. A. Harsh, H. D. Warren, H. P. Henry, A. J. King and F. E. McGowan. A. J. King of Palouse will be the superintendent of the plant.

The
Coming Brick

At last it has been solved. Bricks can now be manufactured from furnace slag, much cheaper than clay, sand-lime or any other brick, both common or the finest face or press bricks. Crushing and transverse tests unquestionable.

Its cheapness of manufacture and its durability makes it the coming brick.

For particulars, address R. C. GANGEWERE, Patentee, Selma, Ala.

Will superintend erection of complete plants

BOOK WANTED

Wanted at once, a copy of the book, "Brick, Tiles, and Terra Cotta," by Davis. Must be in good condition. Address.

Book, care Clay Record,
Chicago. Ill.

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
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POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.
Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

FOR SALE

220 Cast Steel Iron Flat Cars for brick dryer. Cars are roller bearing and have only been used a short time. Address

Southern Brick & Tile Co.
Louisville, Ky.

Brick Plant for Sale or Lease

A conveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address MRS. AGNES L. TURNER,

Ferguson's Wharf, James River, Va.

FOR SALE

Profitable brick plant and business; 20,000 capacity. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago, Ill.

FOR SALE

One No. 20 Cyclone Disintegrator, made by the C. W. Raymond Co. Has been used about two weeks. Practically new. Address

COLUMBIA BRICK & PLASTER CO.
North East, Md.

BRICK PLANT FOR SALE

One of the most complete stiff mud brick plants in Pennsylvania, located on the Pennsylvania Railroad near Philadelphia. Daily capacity, 30,000. Chambers Machine, nine tunnel hot air dryer, eight round down draft kilns, one Dutch kiln, railroad siding to kilns. All equipped with the most up-to-date appliances. Can manufacture bricks at the lowest possible cost. Will sell at a sacrifice, and on easy terms. Good reasons for selling. A rare opportunity. Address S. C., care Clay Record. Chicago

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.

Address Brick Supt.,
P. O. Box 81, Coffeyville, Kans.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

One big No. 6 Monarch Brick Machine, just as good as new; one sander; two sets molds; Tile machine; Bensing Tile Cutter; 50 h. p. Engine and Boiler; heaters; pumps. 18 drying sheds, 100 feet long; 32,000 Pallets; line shafting; pulleys; belts; grate bars; kiln doors; 12,000 St. Louis fire brick, and many other things too numerous to mention.

Want to sell the entire outfit; will take one-third what it is worth. The best location in Southwestern Iowa. Can sell all the tile or brick you can make at good prices. Good chance for a live man. No other brick or tile plant there. Address

J. M. CRABILL
Clarinda, Iowa.

FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer.
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO.
Norristown, Pa.

For Sale at a Bargain

Soft mud brick plant, one Hercules brick machine made by Horton Mfg. Co., one crusher, one sander, one clay elevator, one boiler, one engine, pulleys, belting, shafting, etc.; 11000 pallets, 10x36 inches; Racks for 80,000 brick; kiln doors, grate bars, barrows, trucks. Everything necessary for brick yard. Capacity 20,000 brick daily. Only two million brick have been made on this machinery which was bought new. Address, J. S. COLLINS,

Frankfort, Ky.

FOR SALE CHEAP

Chambers Augers Brick Mackine; Chambers Automatic cutter and table and wet clay pan made by Chambers Bros., Philadelphia, Pa.

Length of brick machine and tables 51 feet as follows: Gearing with fly wheels, 81 ft., long machine 7 ft., long 22 tables with 2 belts and automatic head brick cutter in the center 36 ft. long making full length 51 ft. long. Will make twenty-five to thirty-thousand bricks per day.

WET CLAY PAN.

Two crushing weels 12 ft. 8 in., each around 10 in., thick or wide table that wheels run around 23 ft., around outside of wheels lenght of iron frame east to west at the bottom 12 ft. wide north to south 7 ft. 6 in., 13 ft. 8 in. high from bottom of iron frame work to top fly wheel.

TRUCKS

70 Trucks, 2 ft. Gage all iron for hot air Dyer.

SAMUEL GERSON & CO.
Coatesville, Pa.

BRICK YARD FOR SALE

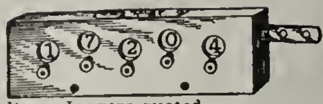
Containing 14½ acres of best grade clay and sand for brick making purposes; equipped with all brick making machinery. Capacity 30,000 brick per day. Now being operated by owner who will sell on account of other business requiring his attention; river front location; boat freight rates; contract for 500.000 brick goes with property, original cost of property $11,000. Will sell for half. Reasonable terms. Investigate quick.

Address Box 343. Kaukauna, Wis.

FOR SALE

One seven foot Wet Pan, with engine attached, in good condition, A bargain. Address

H. B. WEAVER,
905 Hamilton St., Allentown, Pa.



No better made, cut from $8 and $10, to
4 Wheel, $3.00
5 Wheel, $3.25
Guaranteed.
Paper Joggers quoted. Sold by all dealers
R. A. HART, 41 White St., BATTLE CREEK, MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machine; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around. Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments W. L. JONES,

Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick.

Address,
FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE

A four-kiln tile plant in Northern Indiana that is doing a splendid business. Fine clay and good shipping facilities. Good reason for selling.

Address "Indiana,"
Care Clay Record, Chicago, Ill.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 180 H. P. Heine Boiler
Two Freight Elevators
The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,

Nebraska City, Neb.

WANTED

A position as manager, sales manager or superintendent by a young man with founteen years practical experience in the brick business in all its details from clay pit to scaffold; together with a thorough knowledge in the most up-to-date methods in use in the various plants throughout the country. A-1 references.

Address N. Y.
Care of Clay Record, Chicago.

FOR SALE

A good stiff, mud brick plant near Syracuse, N. Y. Clay burns a nice red, suitable for face or common brick. Good market. Ship by water or rail. A bargain. Address 1702 MIDLAND AVE.,

Syracuse N. Y.

WANTED

One second-hand medium size steam shovel for handling clay or sand.

Address E. J. KELLER,
Lexington, Okla.

FOR SALE

Vol 1 of Sager's Collected Works. Book is in splendid condition. Price only $5. Answer at once.

Book, care of Clay Record,
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REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street Cincinnati, Ohio

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY
1413-G Street, N. W.
ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

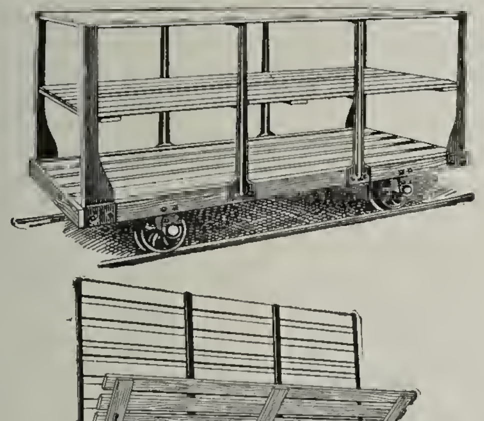
Yours very truly,
(Copy) ELLIOTT S. MORSE.

That which we have done for the above Company we can do for You. We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

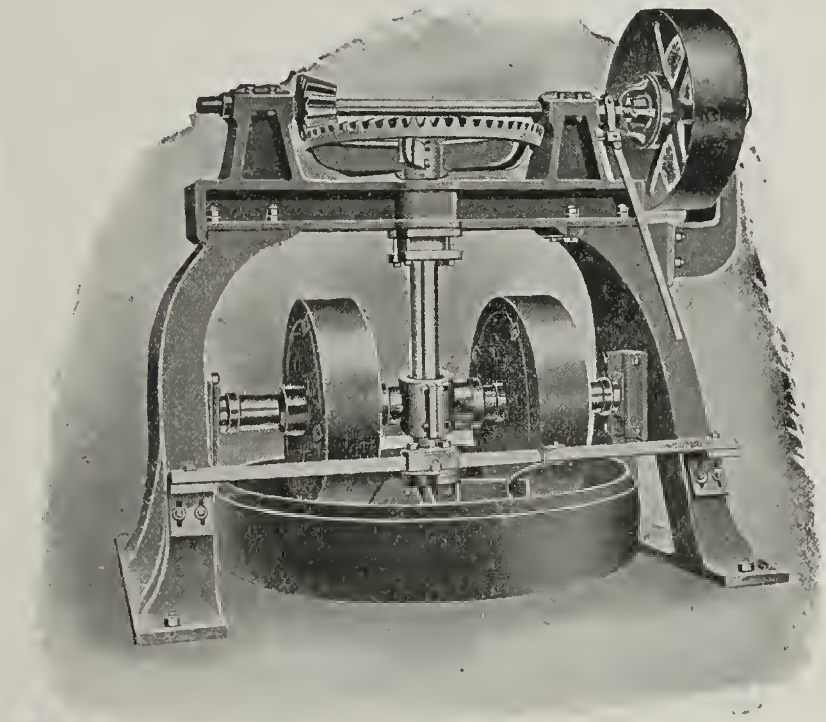
THE KING ENGINEERING COMPANY
RICHMOND, VA.

The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices



Vulcan Iron Works MASON CITY, IOWA



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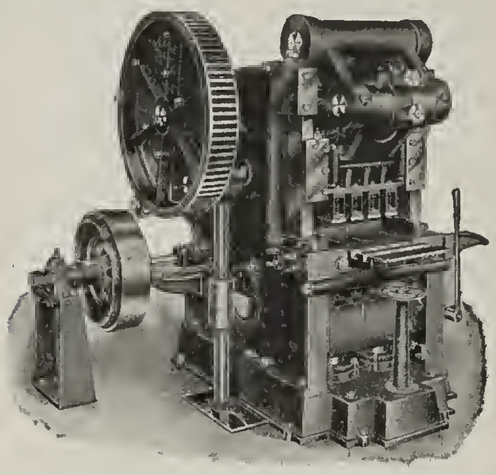
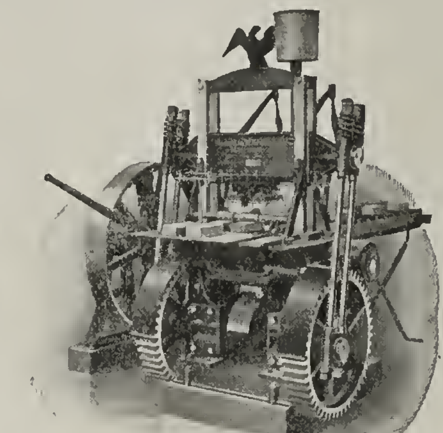
BUILDERS OF
Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.
ROCK AND ORE CRUSHERS

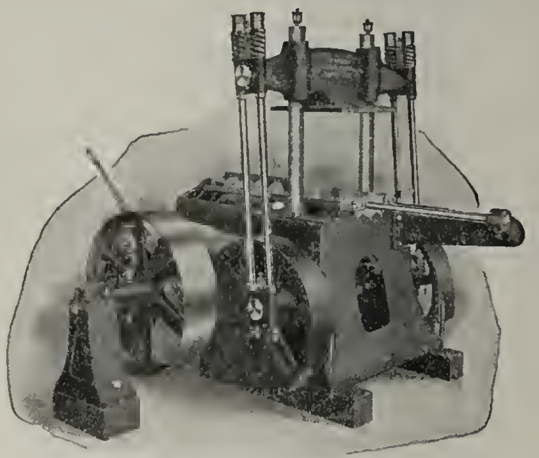
When writing for prices state kind of material and capacity required.

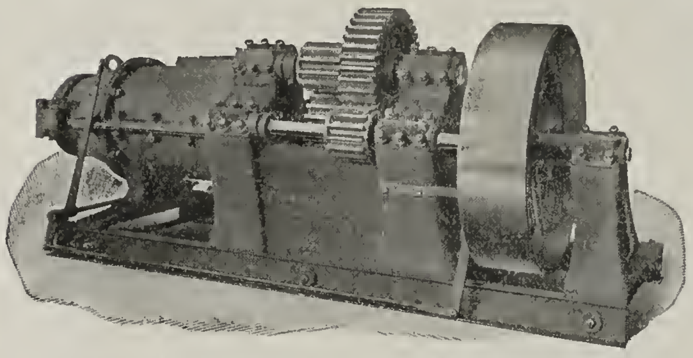
Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

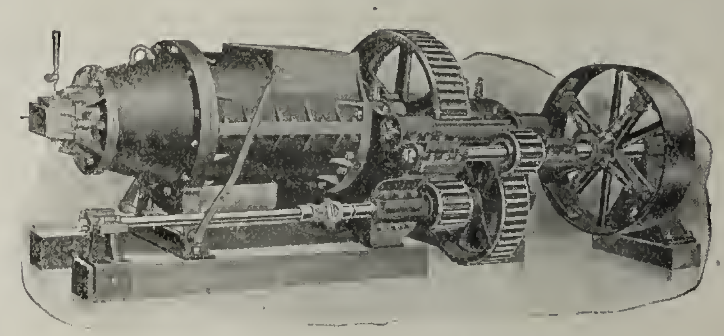
THE AMERICAN CLAY BUILT RIGHT RUN RIGHT MACHINERY COMPANY
BUCYRUS OHIO, U.S.A.

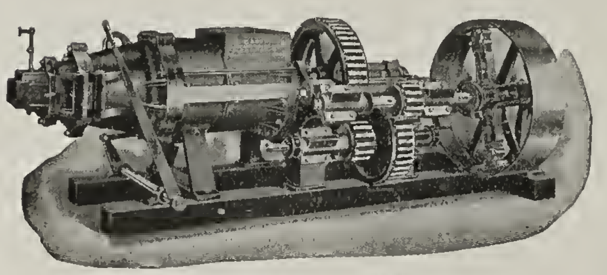

Model "B" Dry Press

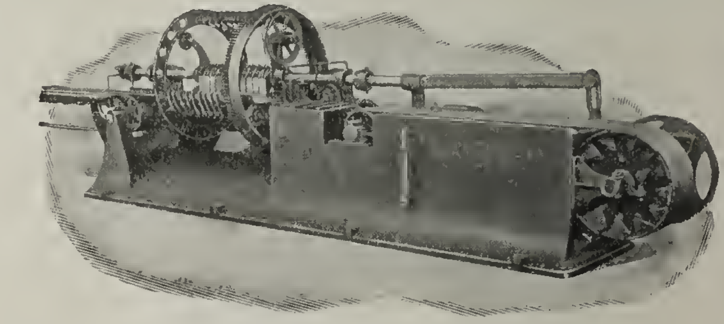

Eagle Repress

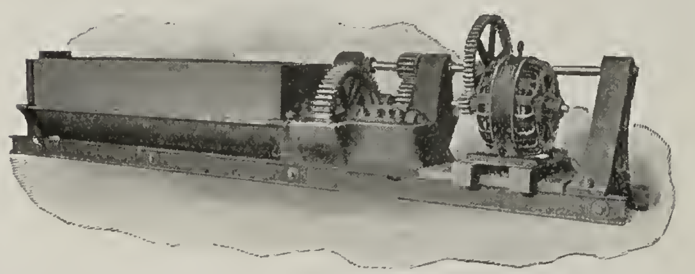

Roofing Tile Press

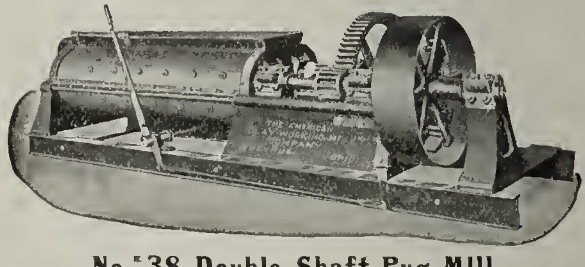

No. 65 Auger Brick Machine


Special Giant Brick Machine


No. 2 Giant Brick Machine


No. 83 Automatic Cutter


No. 51 Electrical Driven Pug Mill

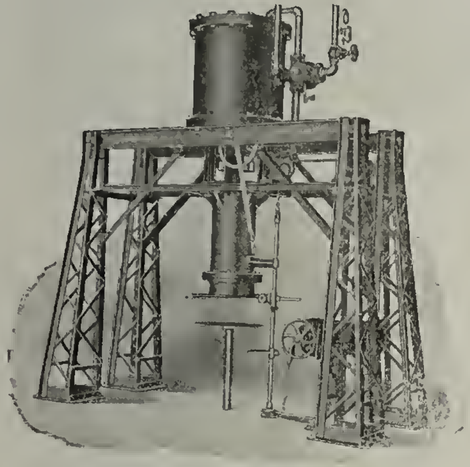

No. 38 Double Shaft Pug Mill

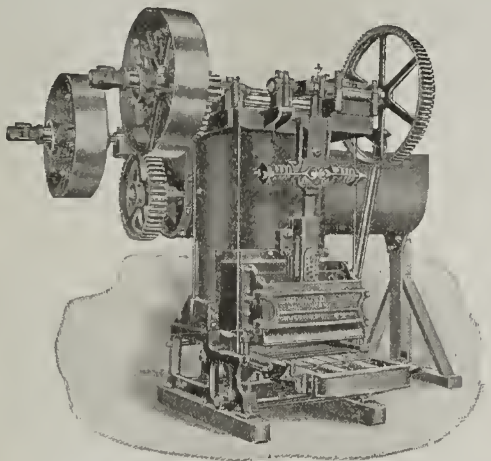
We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

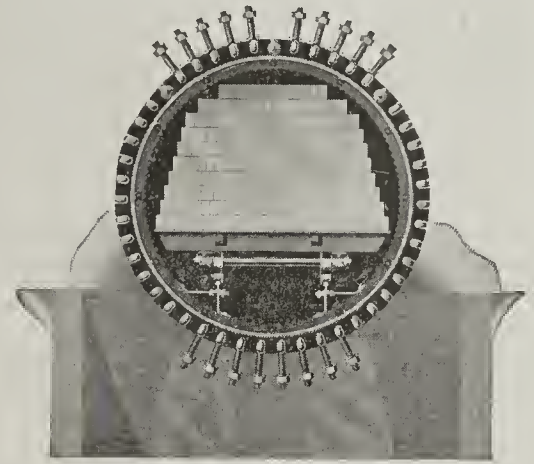
THE AMERICAN CLAY MACHINERY COMPANY

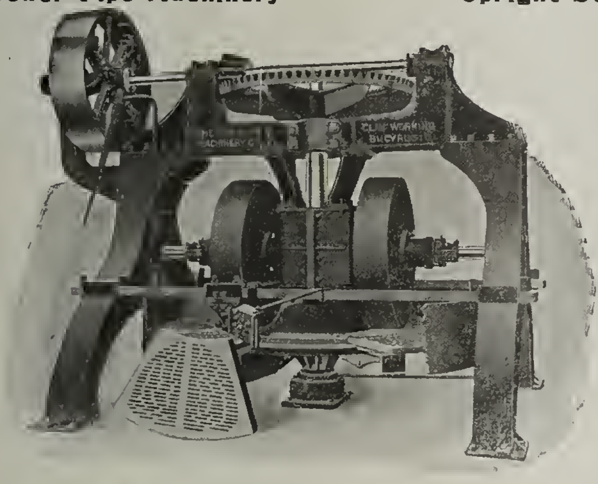
BUILT RIGHT RUN RIGHT

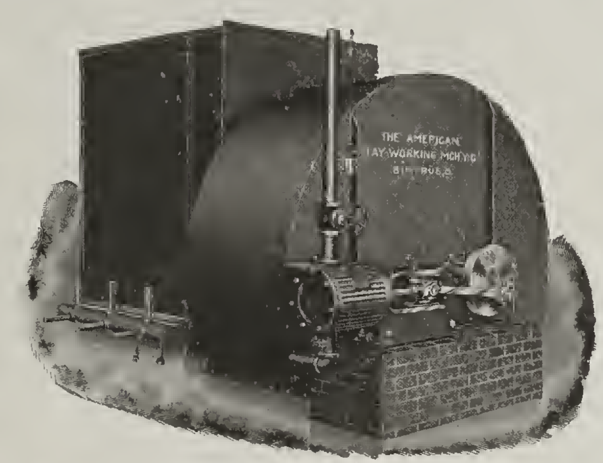
BUCYRUS OHIO, U. S. A.


Sewer Pipe Machinery

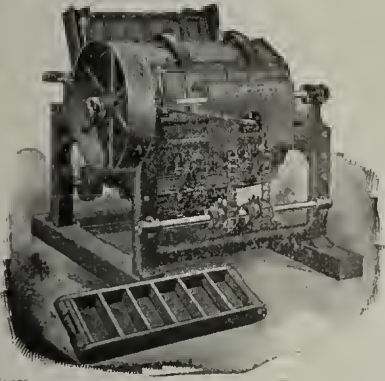

Upright Stock Brick Machine

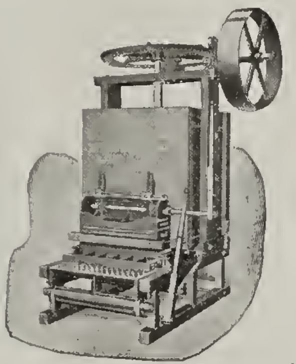

Sand-Lime Brick Machinery

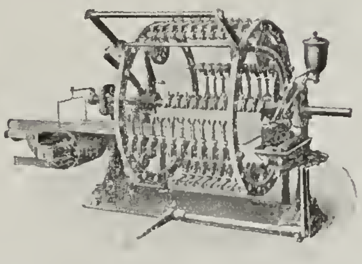

9 Foot Dry Pan

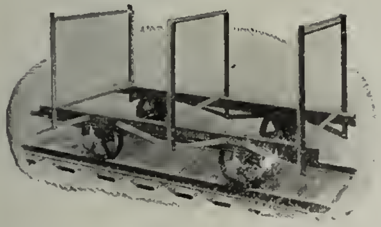


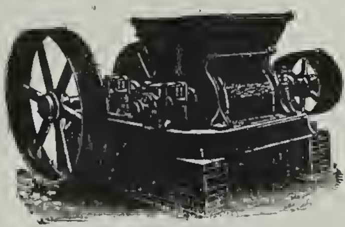
Blower Dryer Apparatus

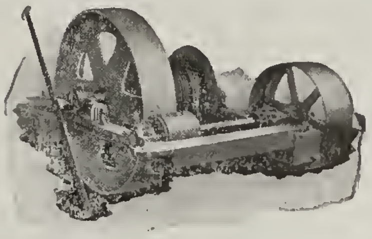

Mold Sander


H. P. Brick Machine


No. 62 Hand Power Cutter


Dry Cars


Disintegrators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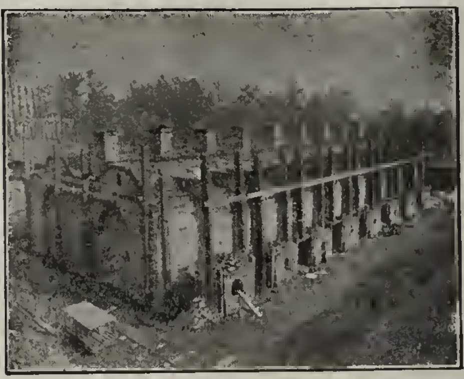

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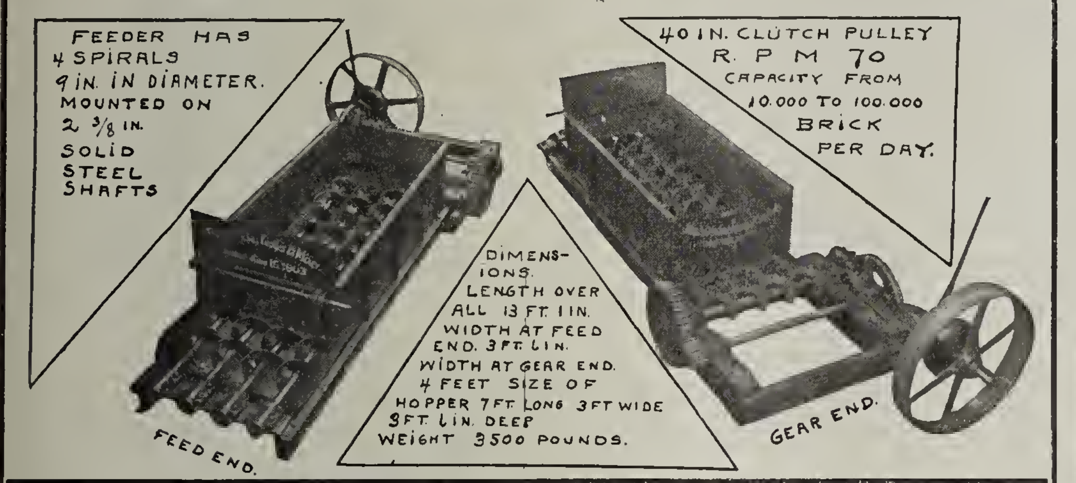
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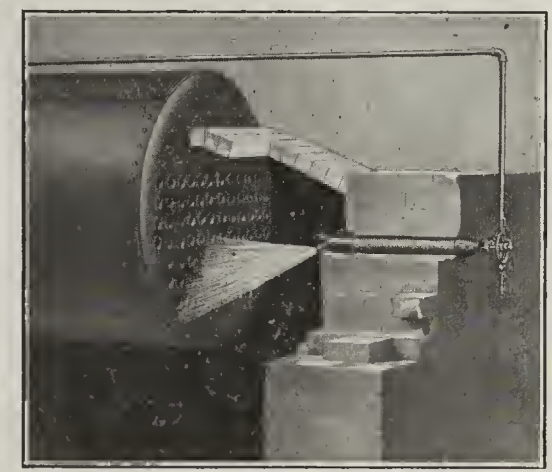

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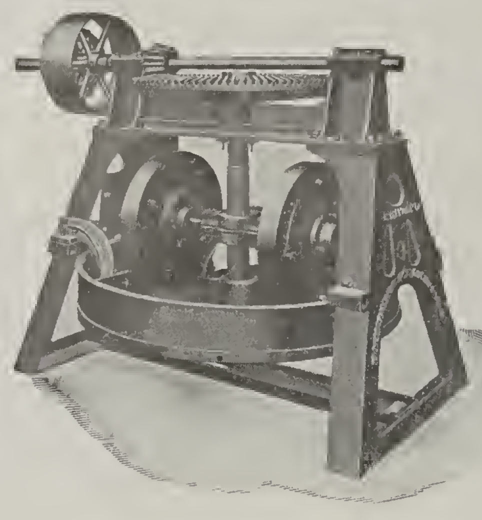

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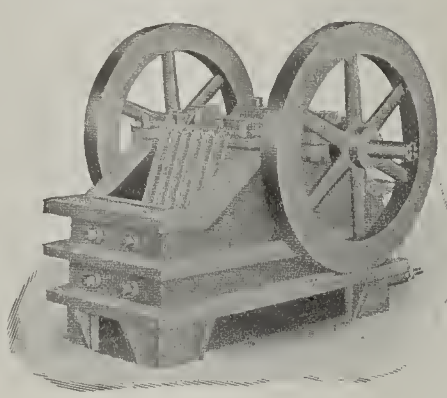

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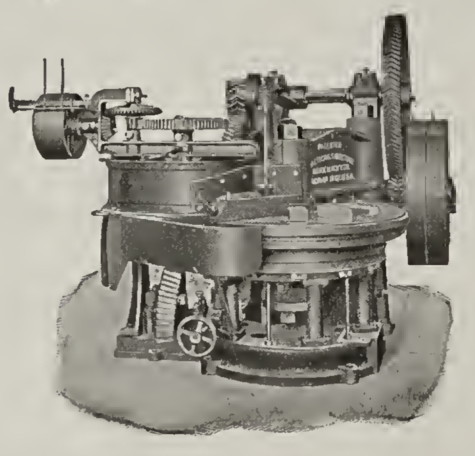

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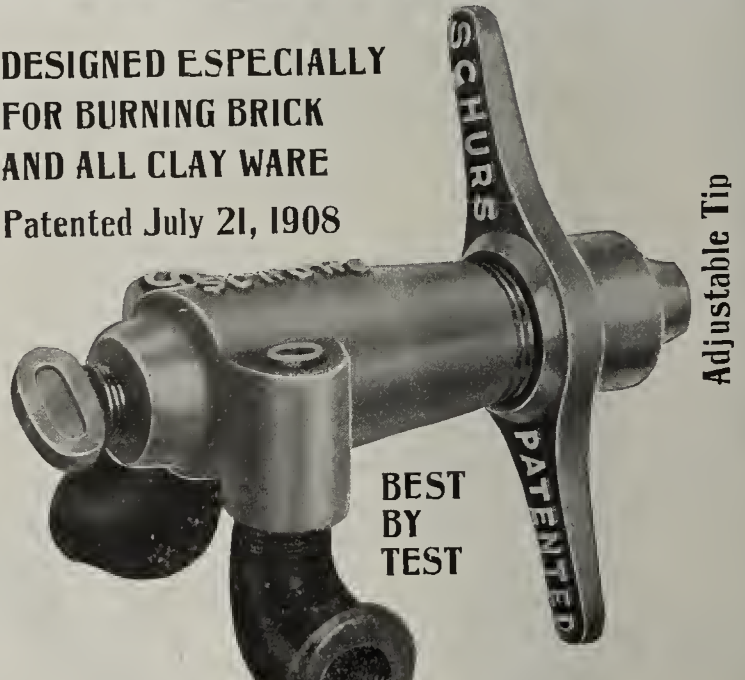

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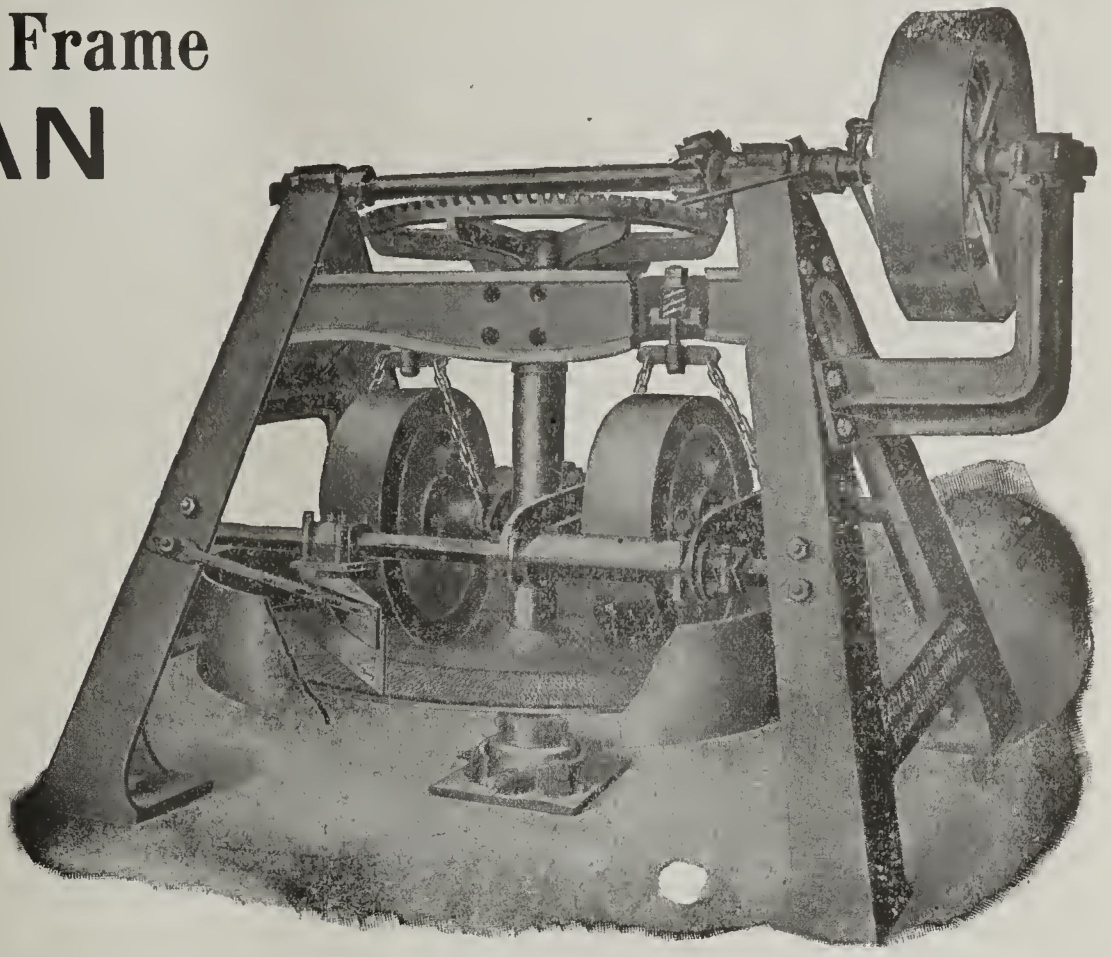

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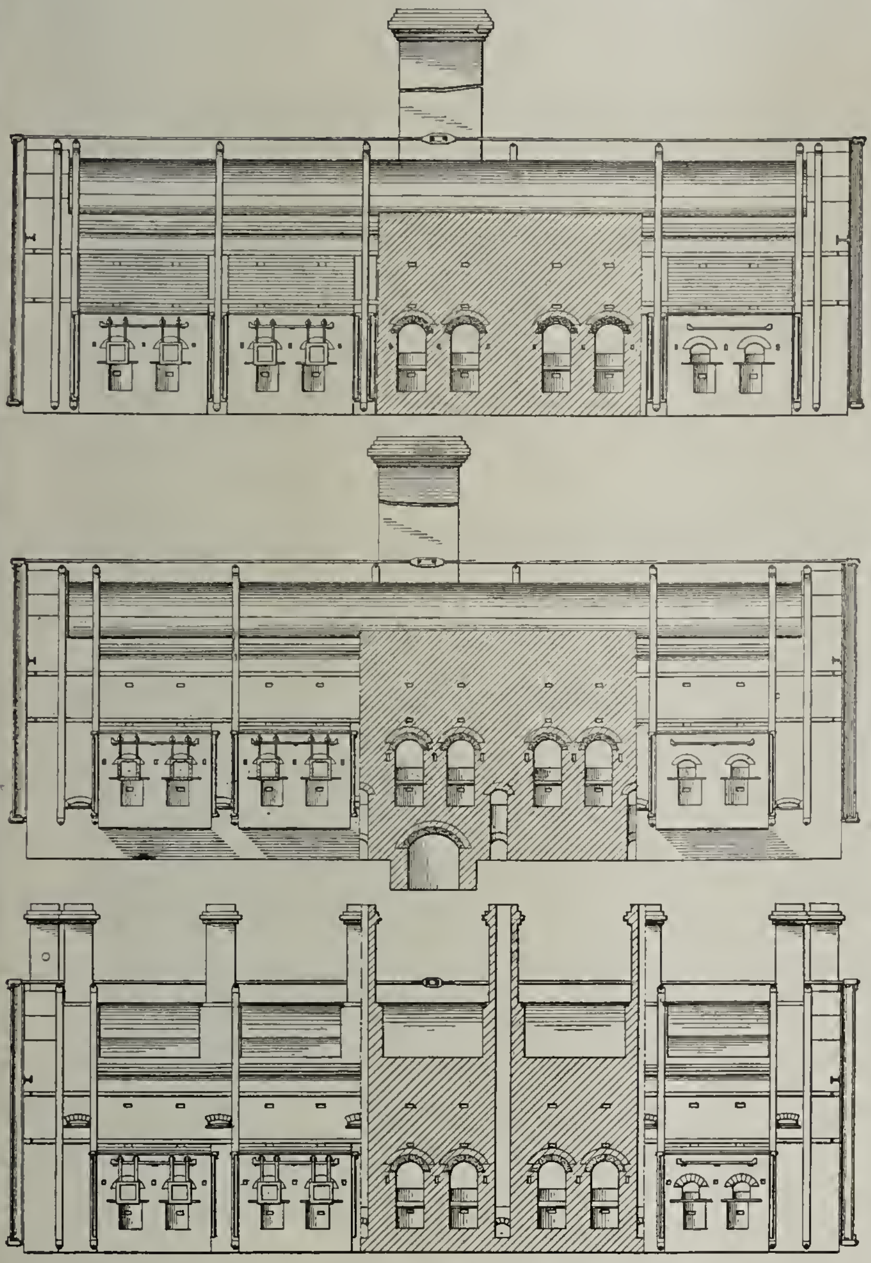
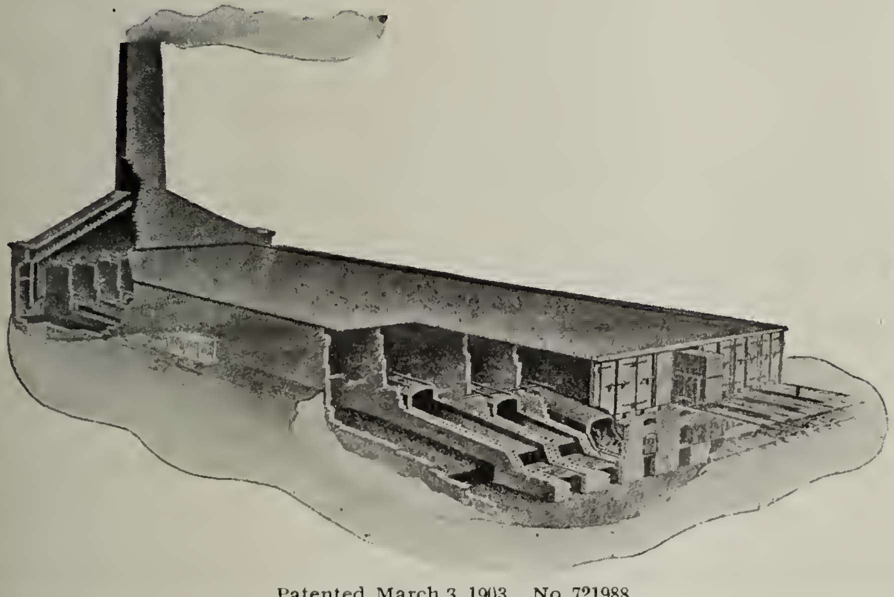


Patented July 8, 1902. No. 704418



Patented March 3, 1903. No. 721988

THOMAS M. WILSON

Mr. Wilson is the Inventor and Patentee of the Wilson Kilns and Dryers, including the smoke consuming furnaces which will burn brick without smoke, also the Continuous Waste Heat System, which does away with the smoke nuisance.

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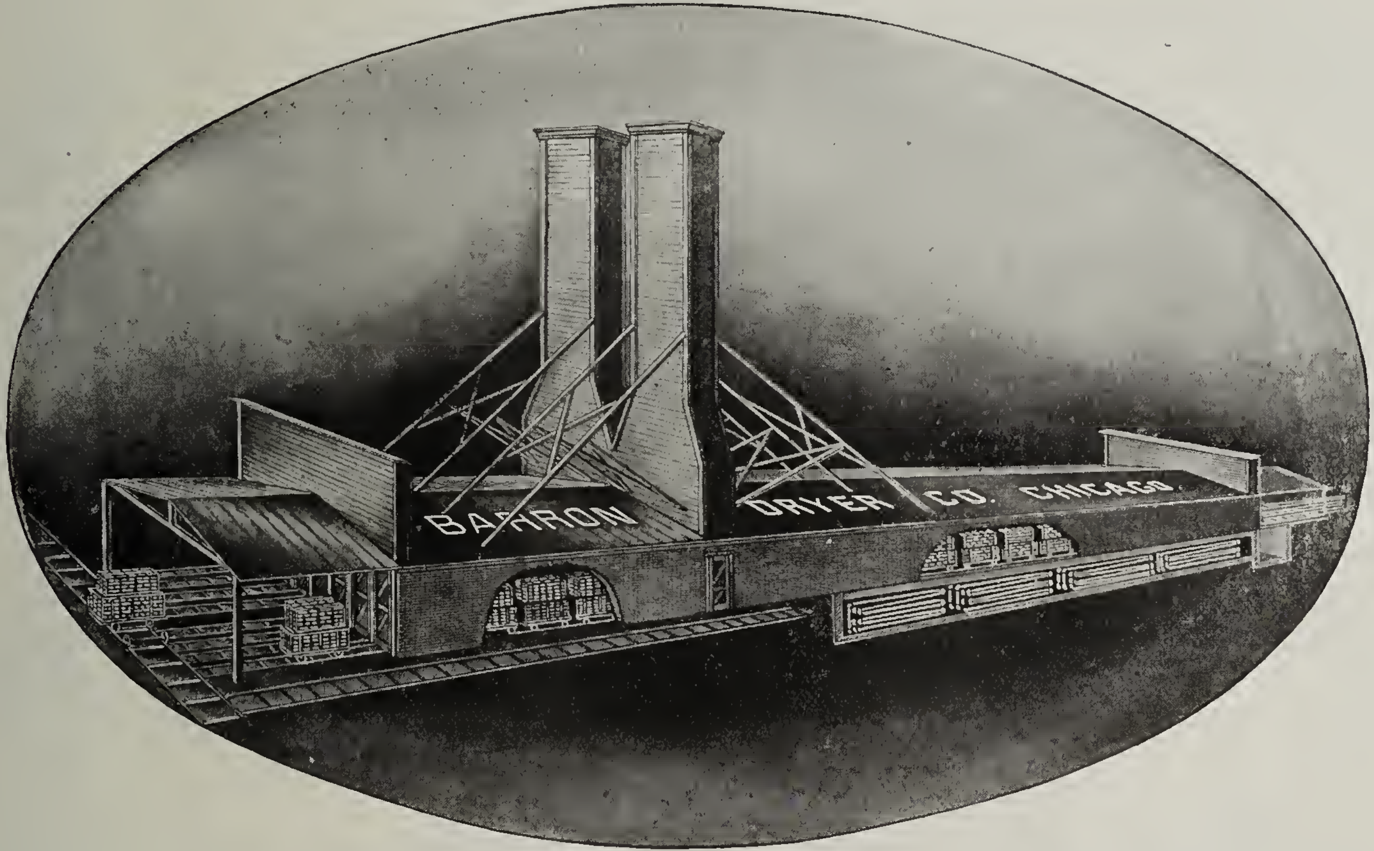
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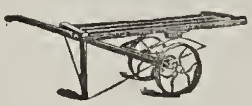
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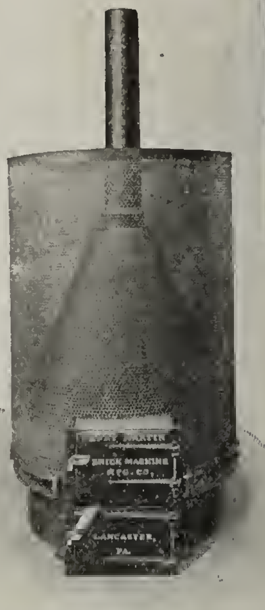

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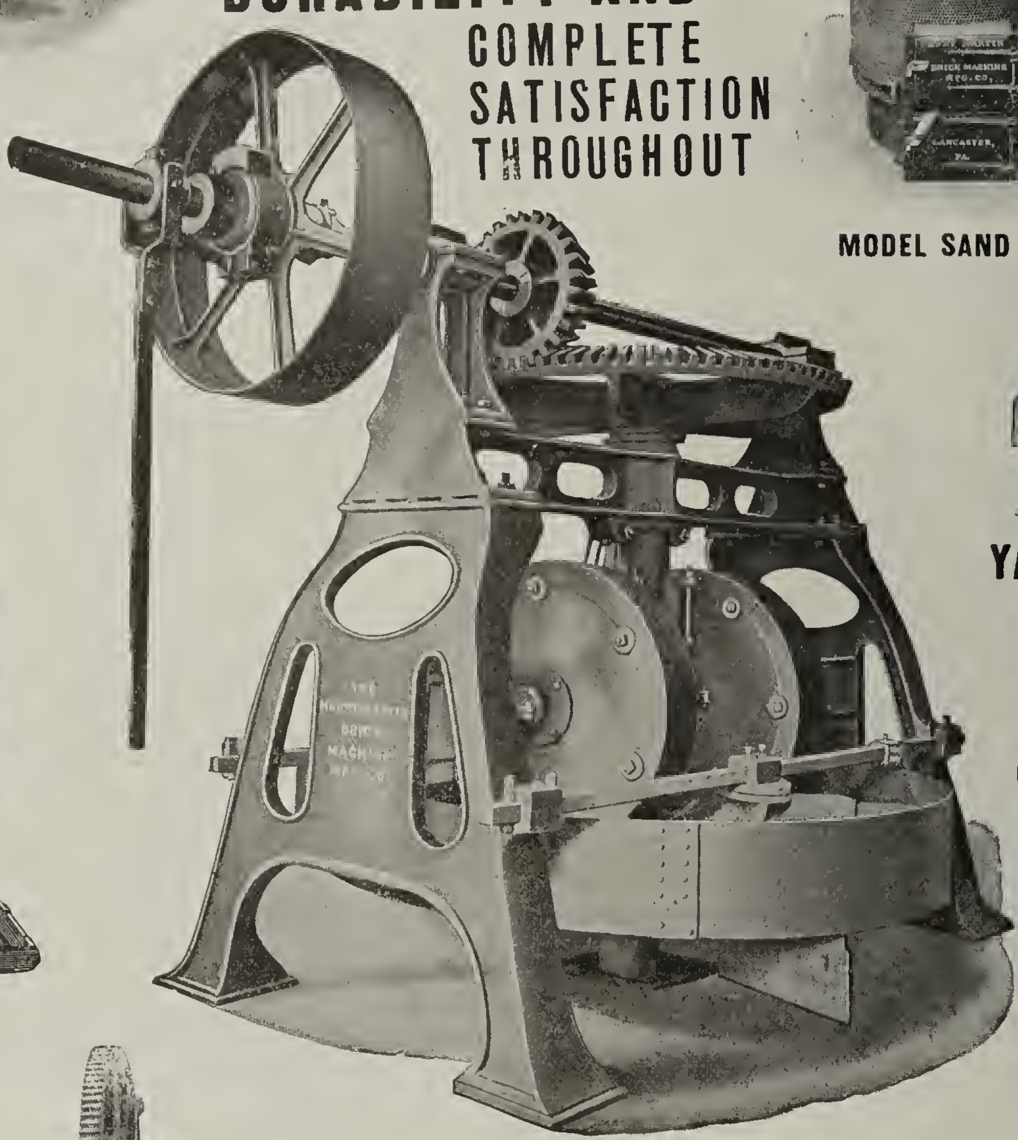

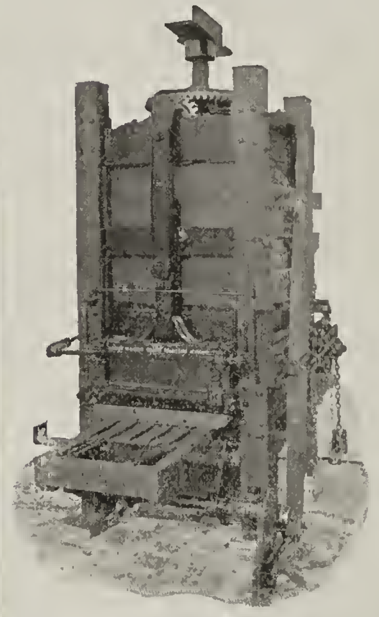
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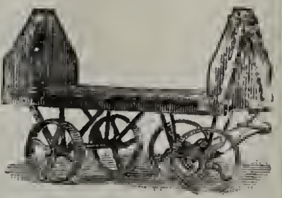

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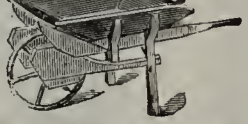

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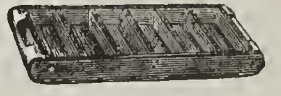

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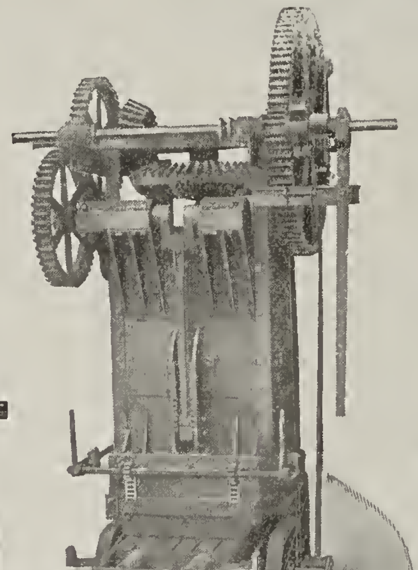
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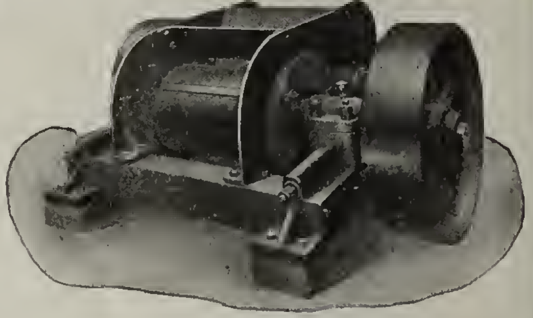
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October 10, 1905, No. 95520
November 14, 1905, No. 804489
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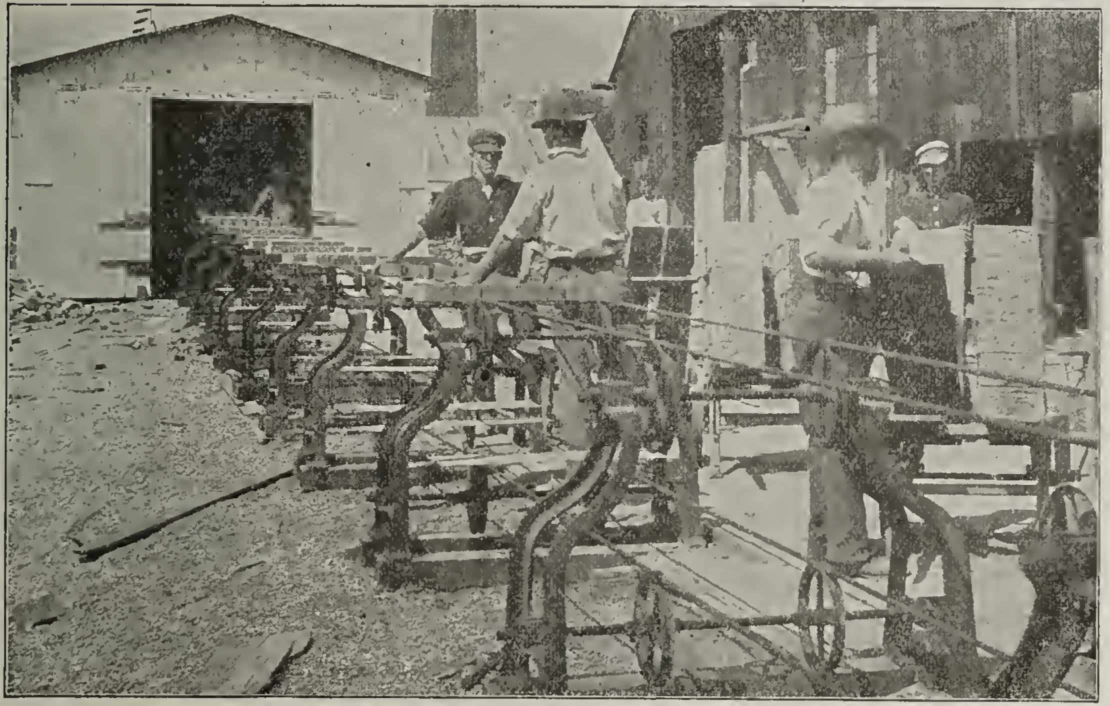

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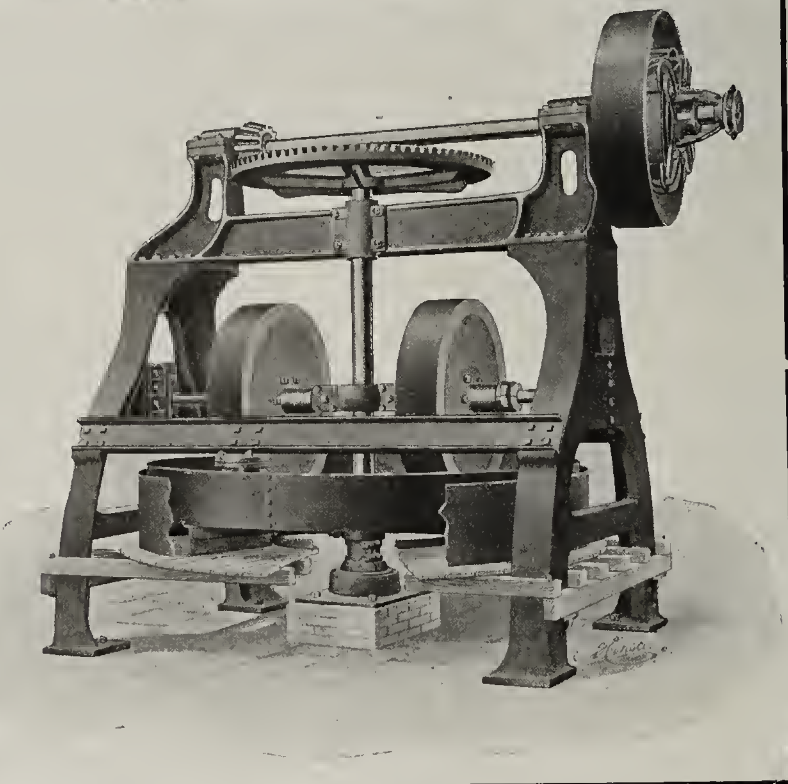
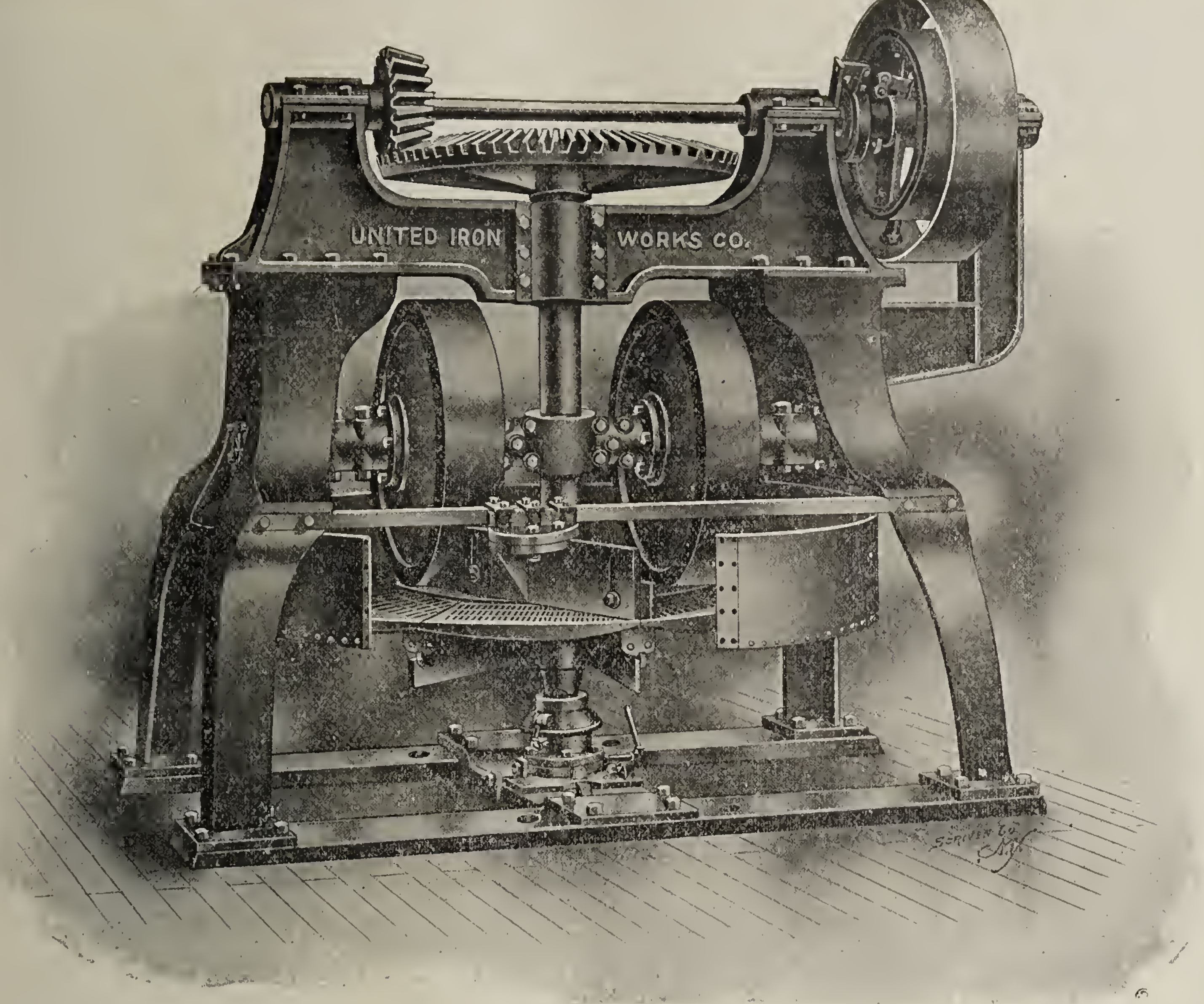
Wet Pans



Dry Pans

The TURNER VAUGHN & TAYLOR CO.

Cuyahoga Falls, Ohio, U. S. A.



Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,
WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
CHERRYVALE, KAS.; KANSAS CITY, MO.

No. 217-E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes from 4 ft. to 11 ft. in diameter.

No. 161-A
Gable Bottom Dump Car, with trip and brake.

CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.

NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights.

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

NO. 277
Steel Mine and Quarry Car.

The Atlas Car and Mfg. Co.
CLEVELAND, OHIO

Vol. 34 No. 11

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
PERTAINING
— TO THE —
CLAY · —
— INDUSTRY.

June 15, 1909

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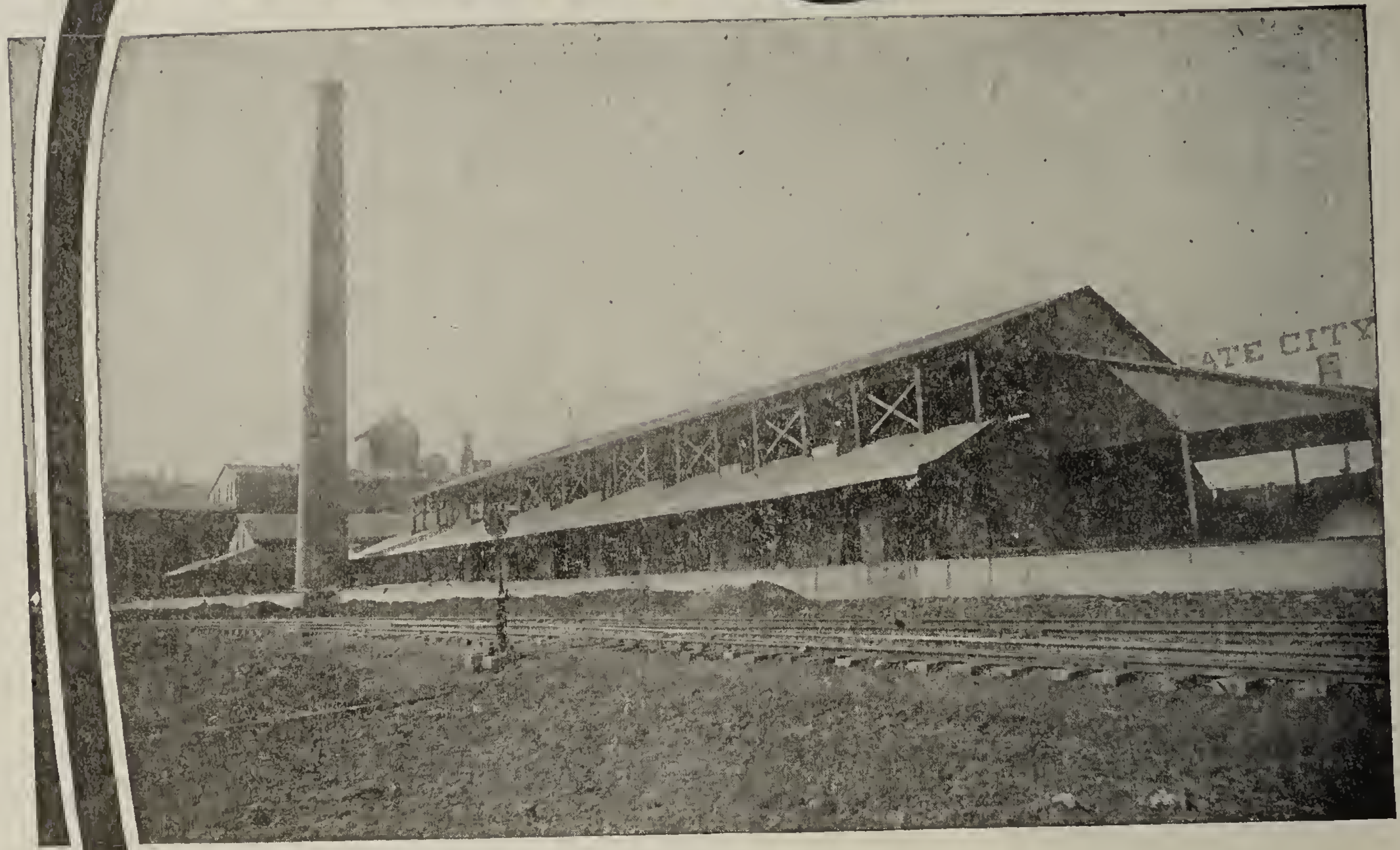
WHY?



THE HYDRAULIC PRESS BRICK COMPANY

Of ST. LOUIS, MO.

Have Contracted with

THE C. W. RAYMOND CO.

. . FOR . .

Six Youngren Producer Gas Fired Continuous Kilns!

Why? *Why?* *Why?*

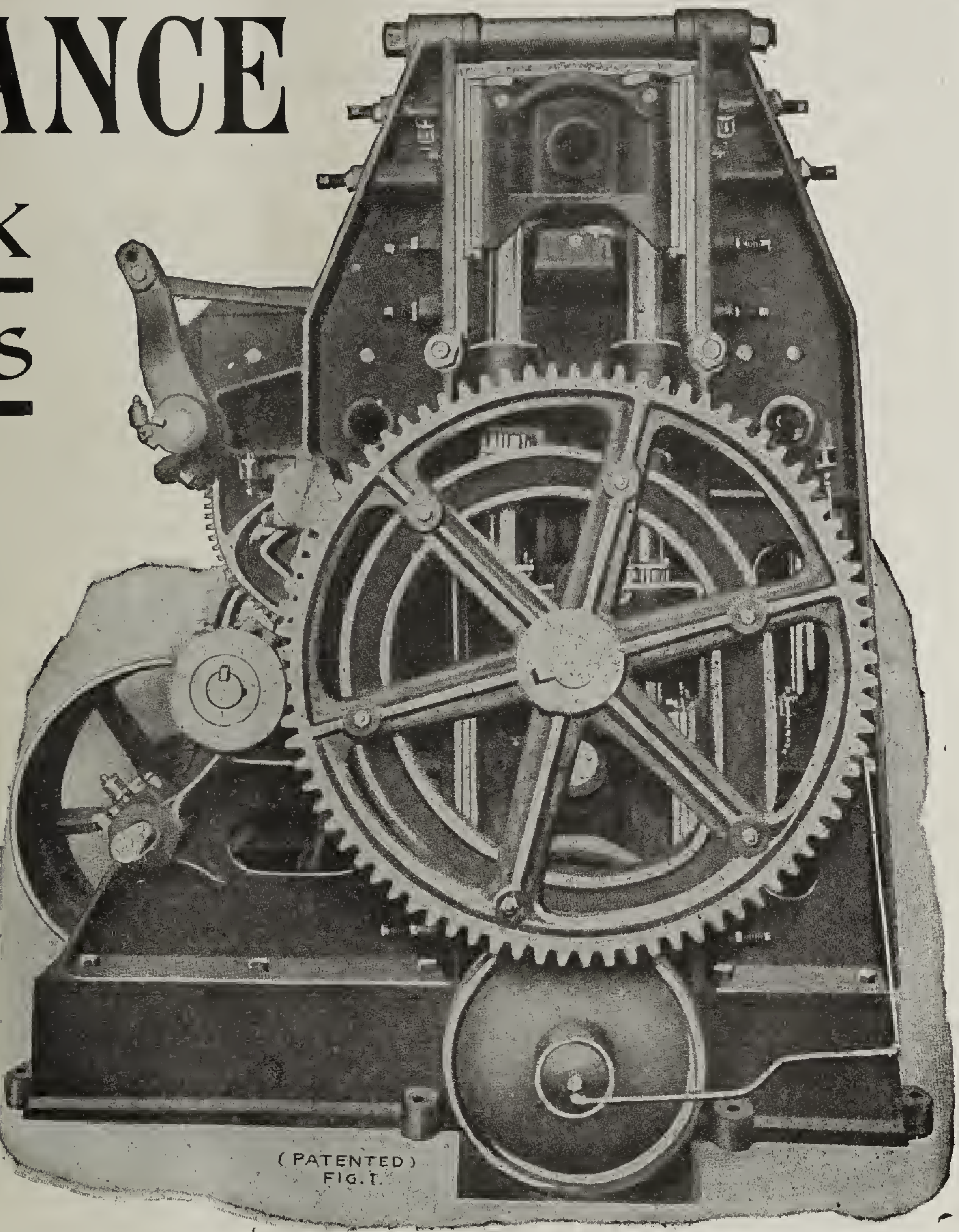
Because the Youngren Producer Gas Continuous Kiln will save 60% of the fuel consumption, give even burns with the minimum per centage of kiln losses. IS THAT A REASON?

THE C. W. RAYMOND COMPANY

Exclusive Licensees P. L. Youngren Patents *DAYTON, OHIO, U. S. A.*

RELIANCE

BRICK PRESS



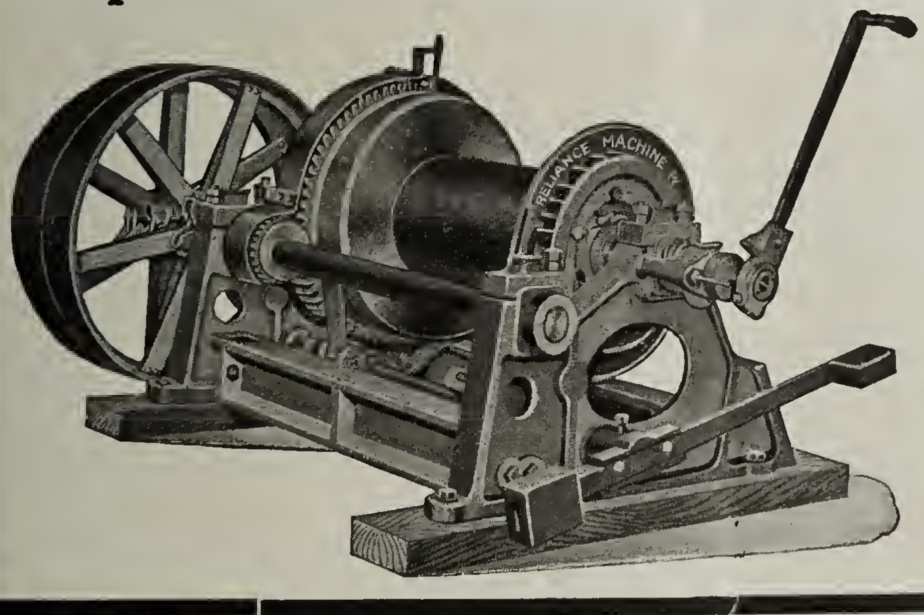
(PATENTED) FIG. 1.

The Only Machine Making Brick Without Granulated Centers

No Toggles
Powerful
Simple

We Design and Equip Dry Press Brick Plants Complete

Improved Reliance Friction Drum Hoist



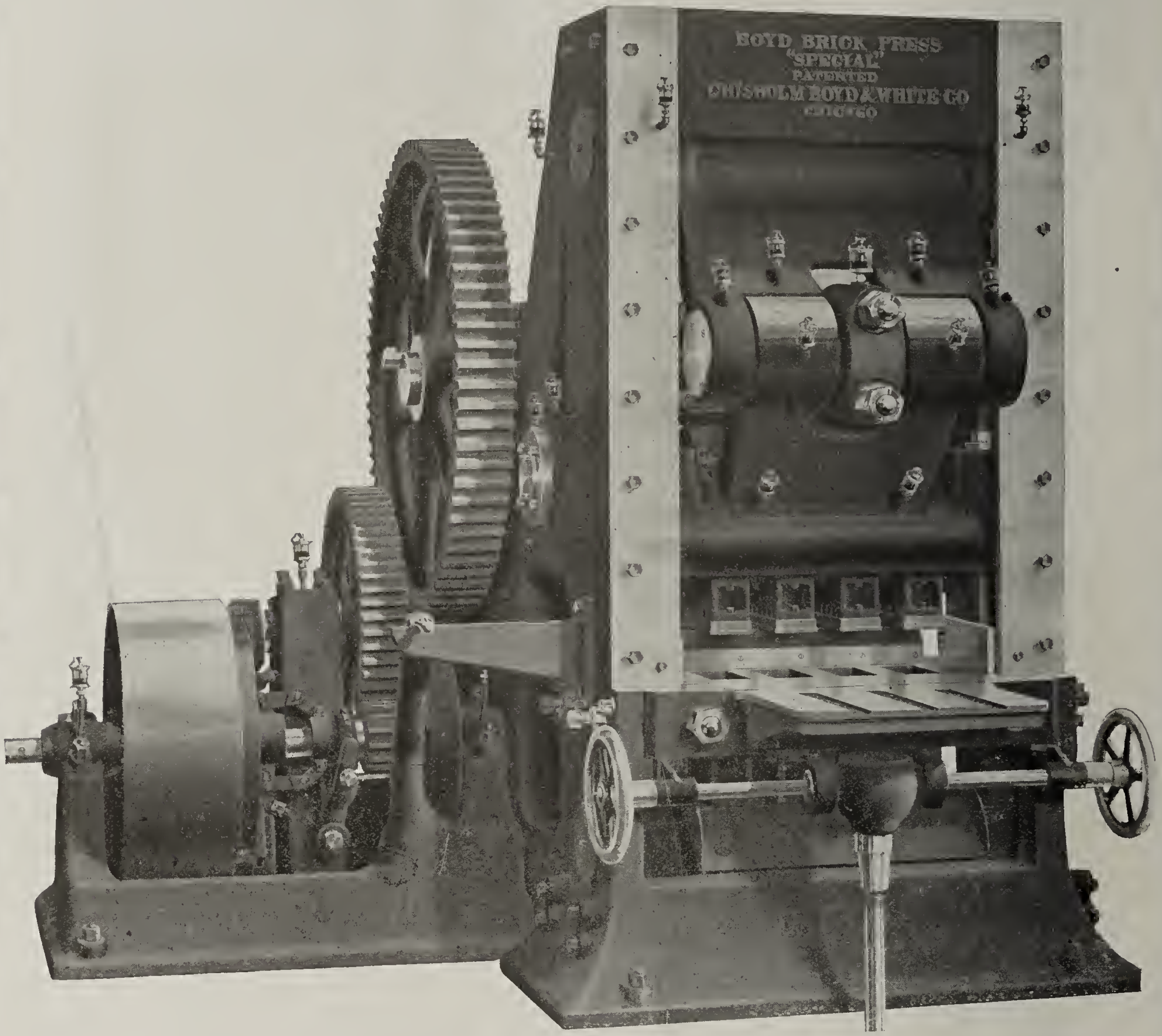
STEAM OR BELT DRIVEN

Specially Adapted to Service in Clay Plants

RELIANCE MACHINE and TOOL WORKS, St. Louis, Mo.

THE BOYD BRICK PRESS

Built in Two, Four and Six-Mold Sizes



FOUR-MOLD SPECIAL

BRICK PLANTS designed and complete machinery equipment furnished. More Boyd Presses in use than all other Press Brick Machines combined.

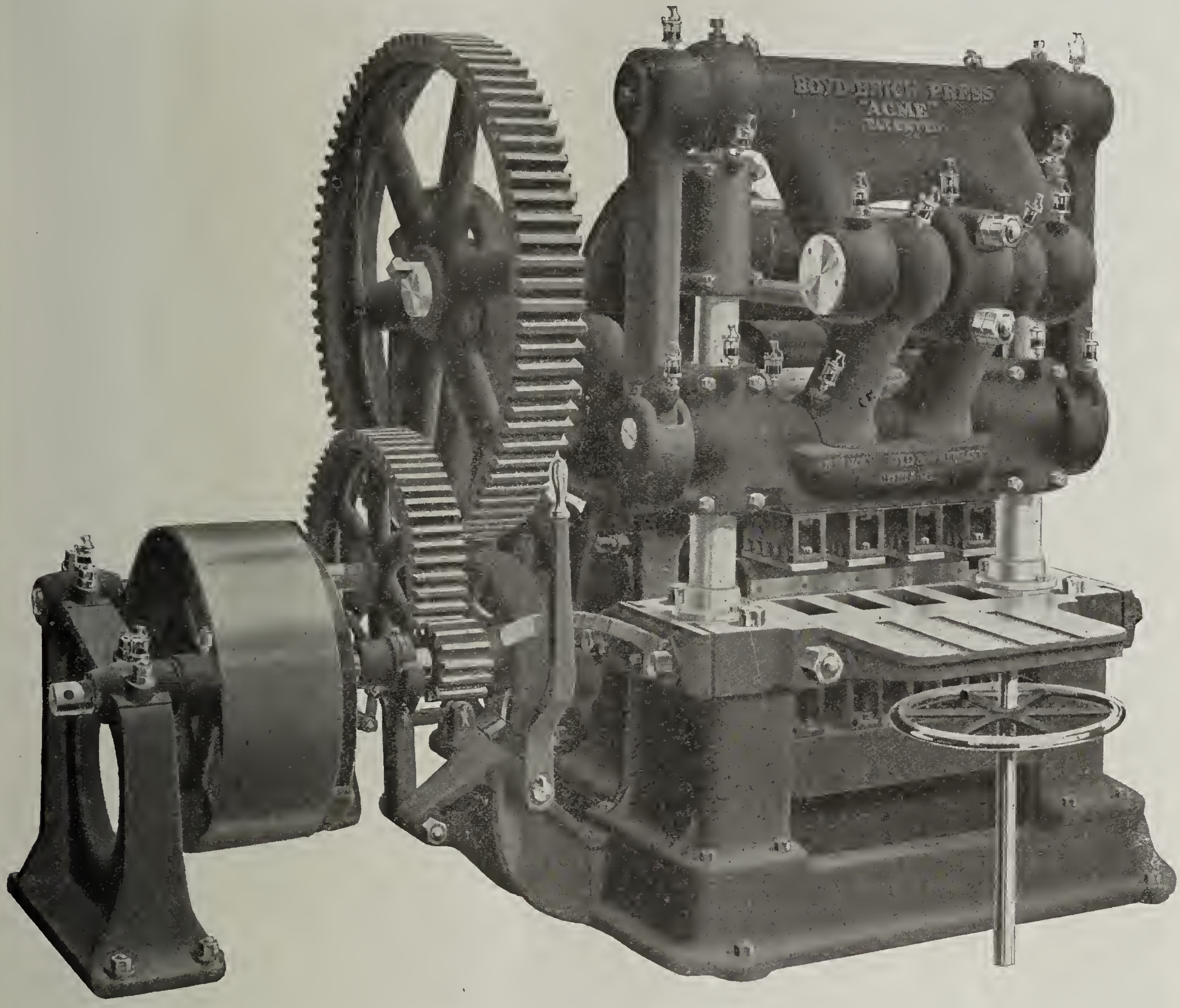
The Boyd Press has great strength and endurance, great pressure and long dwell. Boyd Presses built 20 years ago are still in use and doing good work. Brick Presses that last are the cheapest in the end.

Chisholm, Boyd & White Company

Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

THE BOYD BRICK PRESS

Built in Two and Four-Mold Sizes



FOUR-MOLD "ACME"

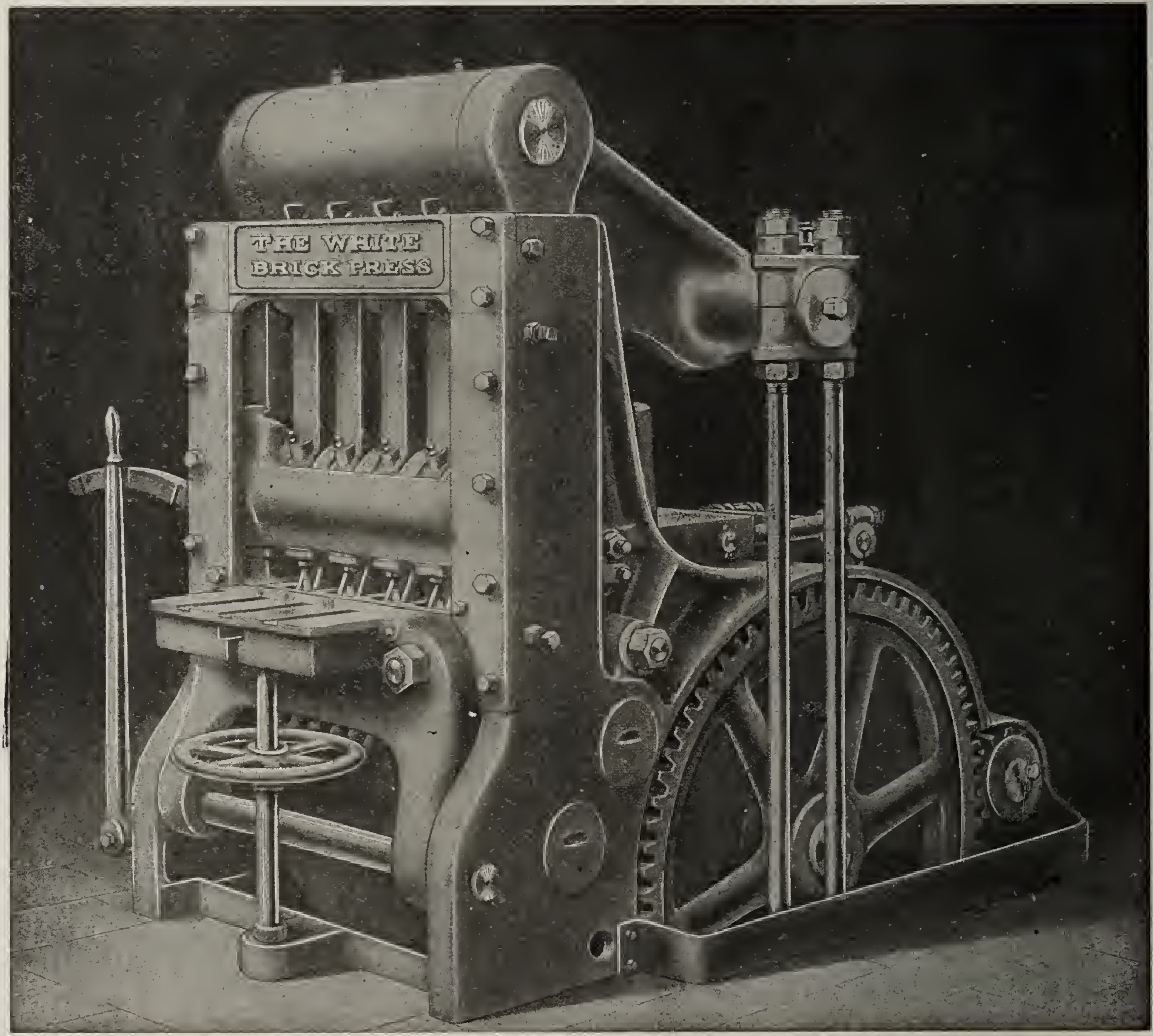
Detailed perfection, strength, endurance and quality of product have made the Boyd, the Brick Press by which all others are judged.

Write for catalogue No. 20 containing suggestions concerning the equipment of brick plants with complete plans.

CHISHOLM, BOYD & WHITE CO.

Office and Works: 57th and WALLACE STREETS CHICAGO, ILLINOIS

ALWAYS ON THE JOB
THE WHITE BRICK PRESS



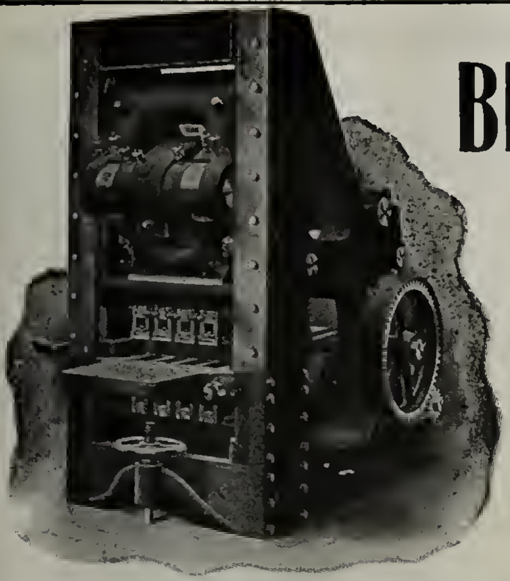
When You Learn of a Breakdown on the Yard, You may be sure it is NOT the PRESS, if it is a WHITE

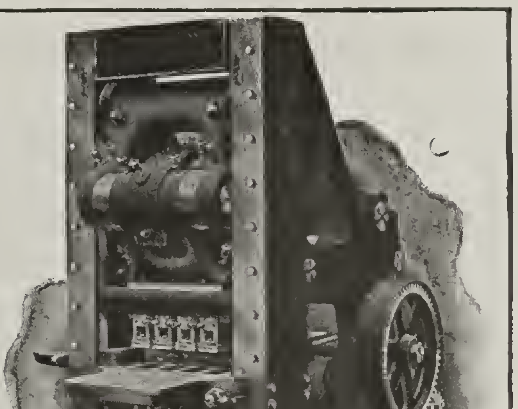
SEND FOR CATALOGUE

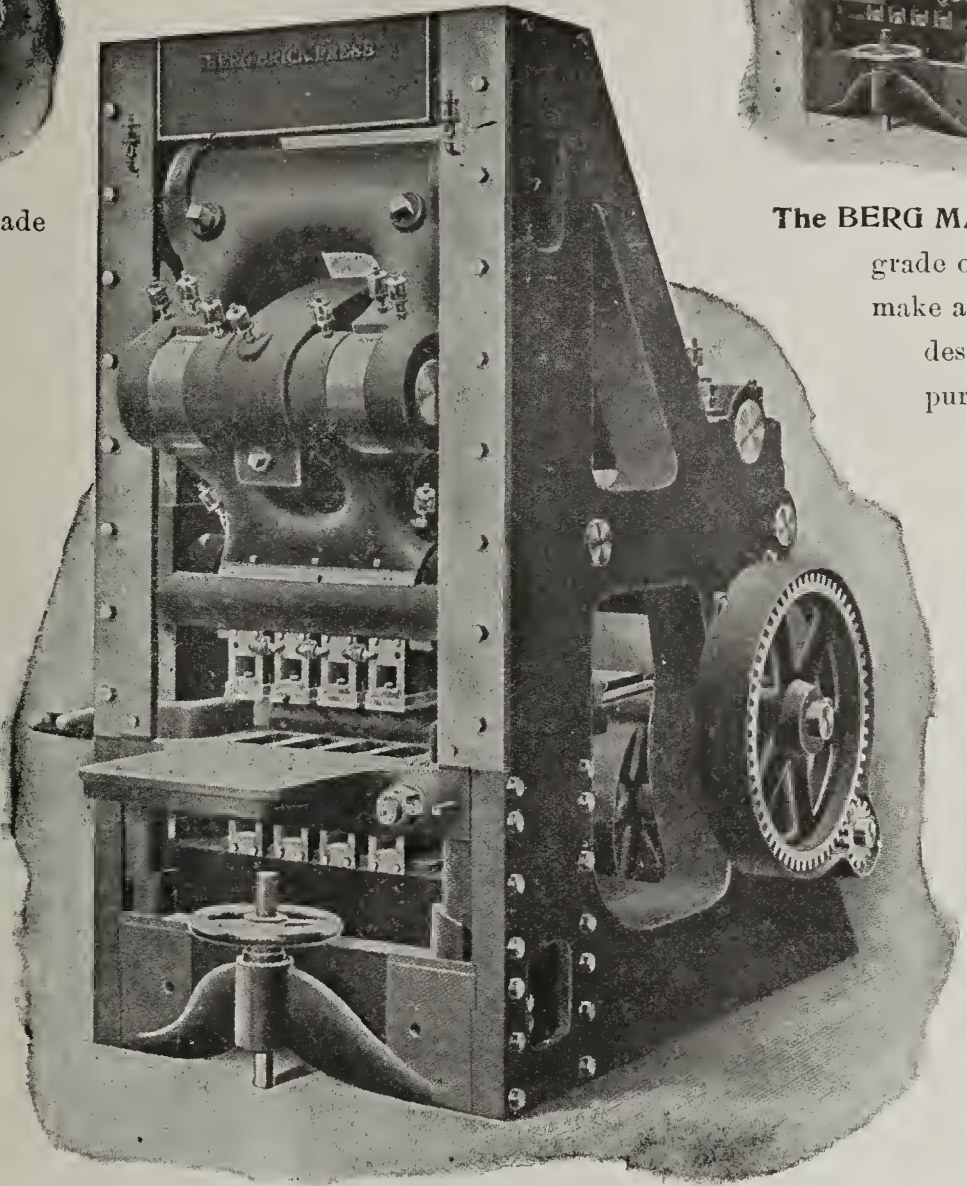
CHICAGO BRICK MACHINERY CO.
1308 GREAT NORTHERN BUILDING, CHICAGO

BERG BRICK PRESS

The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.







The BERG for the highest grade of pressed brick of shale or clay. It makes all kinds of shapes and sizes of brick. Changes from one shape to another can be made in less than an hour's time.

First-Class Workmanship. Cut Gearing. Fully Warranted.

The BERG makes the best sand-lime brick and cheapest because it is the strongest machine and gives the highest pressure. Thirty-five sand-lime plants in United States use the **BERG** Brick Press SUCCESSFULLY.

The BERG MAKES the highest grade of fire brick. Can make all kinds of shapes desired for fire-brick purposes.

Three distinct pressures make the brick evenly pressed all through. No granulated centers of the brick.

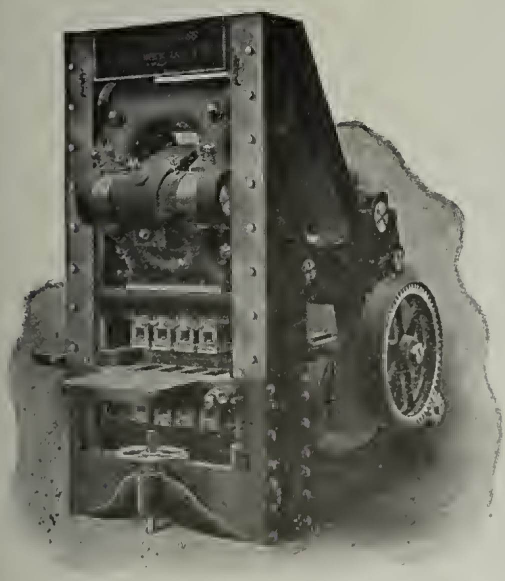
The BERG is the best for sand and cement because of its strong pressure. Uses less cement, makes cheaper brick.

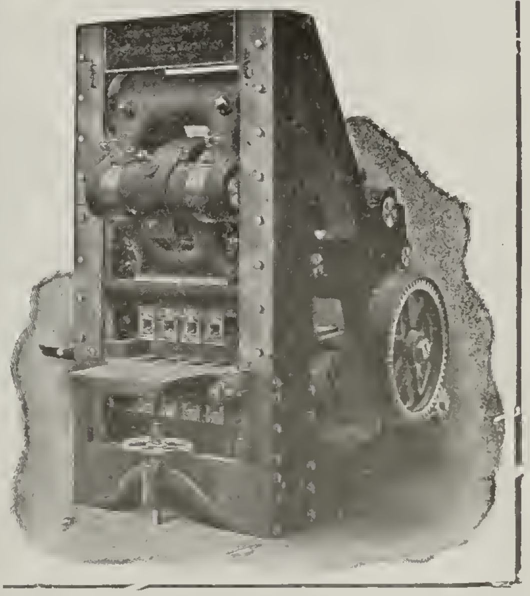
The 1905 Berg Press

Many other steps further forward in improvement and highest grade of material and workmanship, also cut gearing. Fully guaranteed as to its success. Manufactured by its inventor in Toronto, Canada, exclusively. Plans and specifications on the different kinds of plants furnished, also all equipments.

For prices and full particulars, address

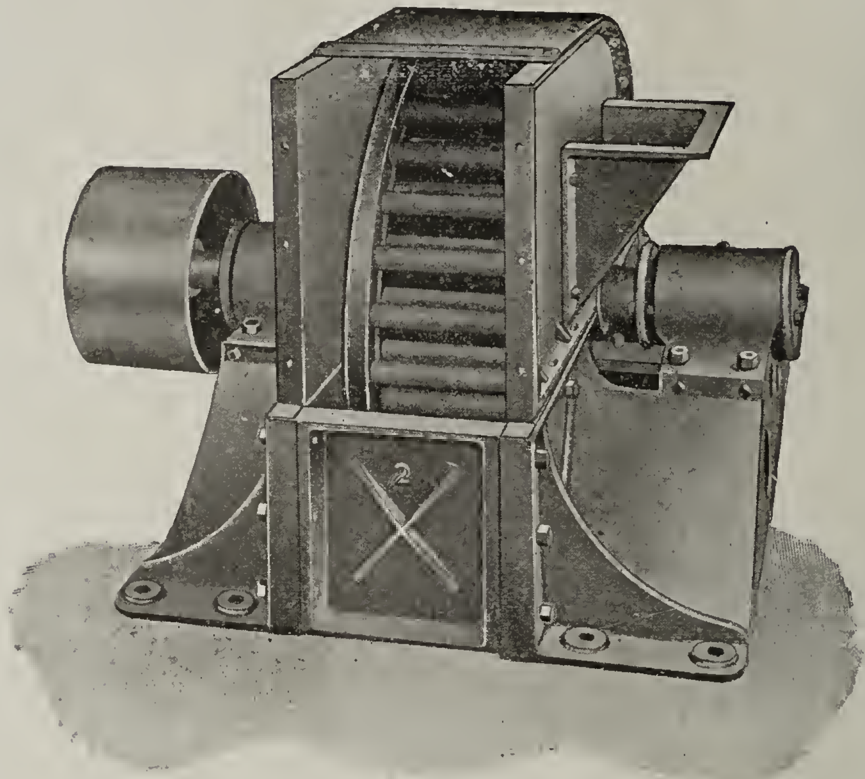
A. BERG & SONS
OFFICE: MANNING CHAMBERS
TORONTO, ONT., CANADA





The Fernholtz Brick Machinery Company

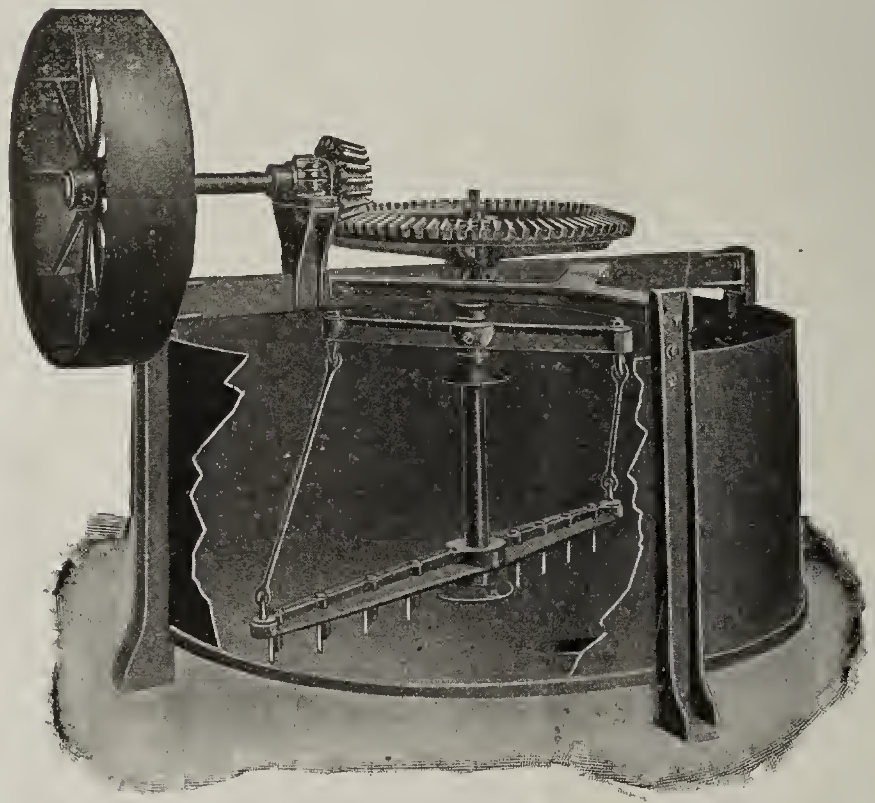
Sizes
29"
36"
42"
50"



Fitted with Adjustable Pins

THE FERNHOLTZ CLAY PULVERIZER

If you want to make a FACE BRICK you need it.



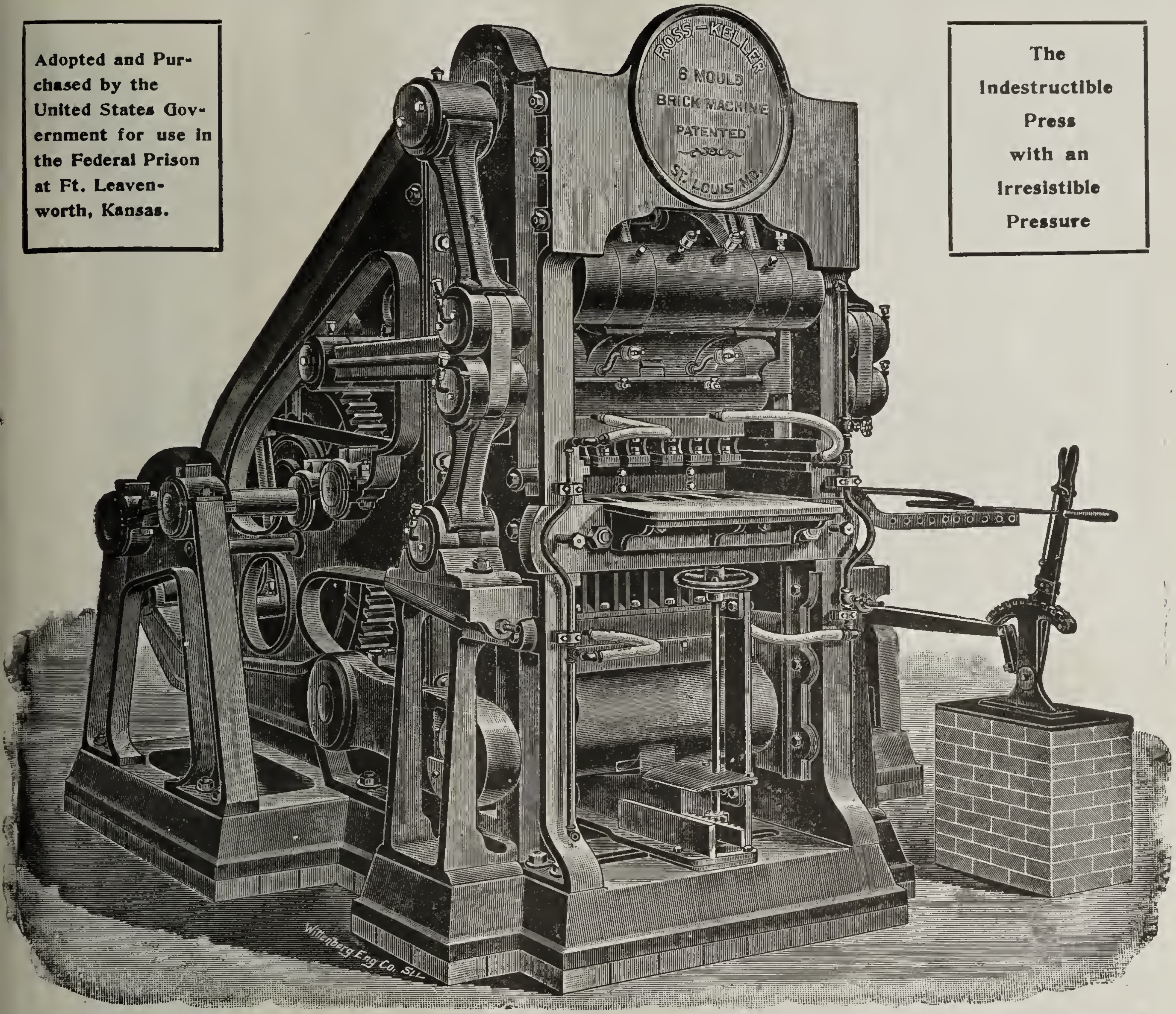
Makes Your Brick Uniform

A GOOD MIXER IS ALWAYS APPRECIATED

The Fernholtz Brick Machinery Company,
Boyle Ave. and Old Manchester Road, St. Louis, Mo.

Adopted and Purchased by the United States Government for use in the Federal Prison at Ft. Leavenworth, Kansas.

The
Indestructible
Press
with an
Irresistible
Pressure



WE BUILD

Sand-Lime Brick Plants, Shale and Clay Brick Plants

ARE ALSO SOLE MANUFACTURERS OF THE

Ross-Keller Triple Pressure Brick Press

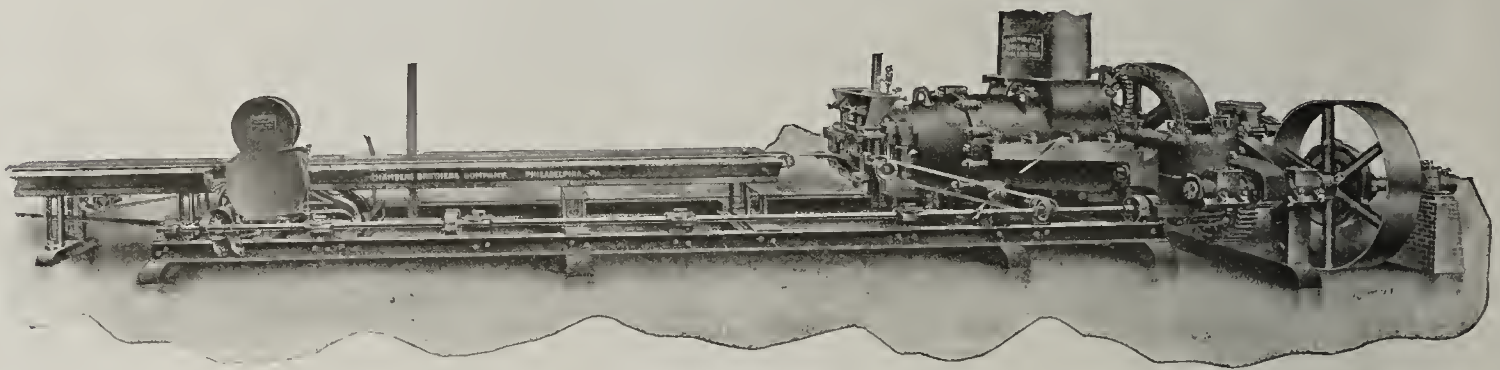
The strongest and most efficient Brick Machine made, and the only Press that gives three distinct pressures to the brick

---

ROSS-KELLER TRIPLE PRESSURE BRICK MACHINE CO.

OFFICES FULLERTON BUILDING, - - - - - - ST. LOUIS, MO.

Chambers Brick Machinery



Strong, Heavy Machines with Steel Pinions and Shafts; Stone Extracting Crushers, Five Sizes Disintegrators; Dry Pans; Single and Double Shaft Mixers and Pug Mills; New Pattern Clay Elevators.

Manufacturers of

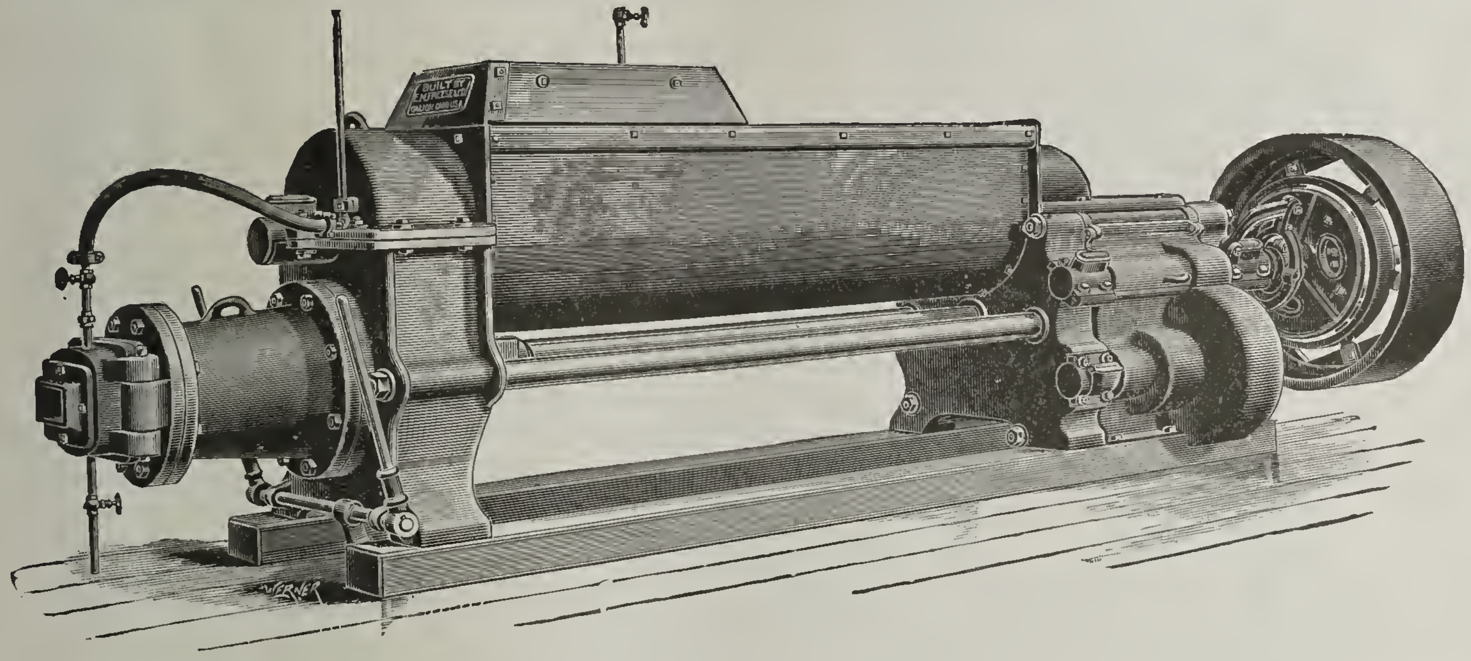
THE KEYSTONE DOUBLE DISINTEGRATORS

For Grinding Tough Clays in which Small Stones may be Imbedded

Chambers Brothers Company

Philadelphia, Pa. Chicago, Ill.

UNION BRICK MACHINES



We build these Machines in five sizes. Capacities to 10,000 brick per hour.

Several hundred are in everyday use. They do first-class work and are convenient, economical and durable. This can be verified by investigation.

We also build Brick Machines with separate Pug Mill.

Don't forget our Automatic Cutters. **They give satisfaction.**

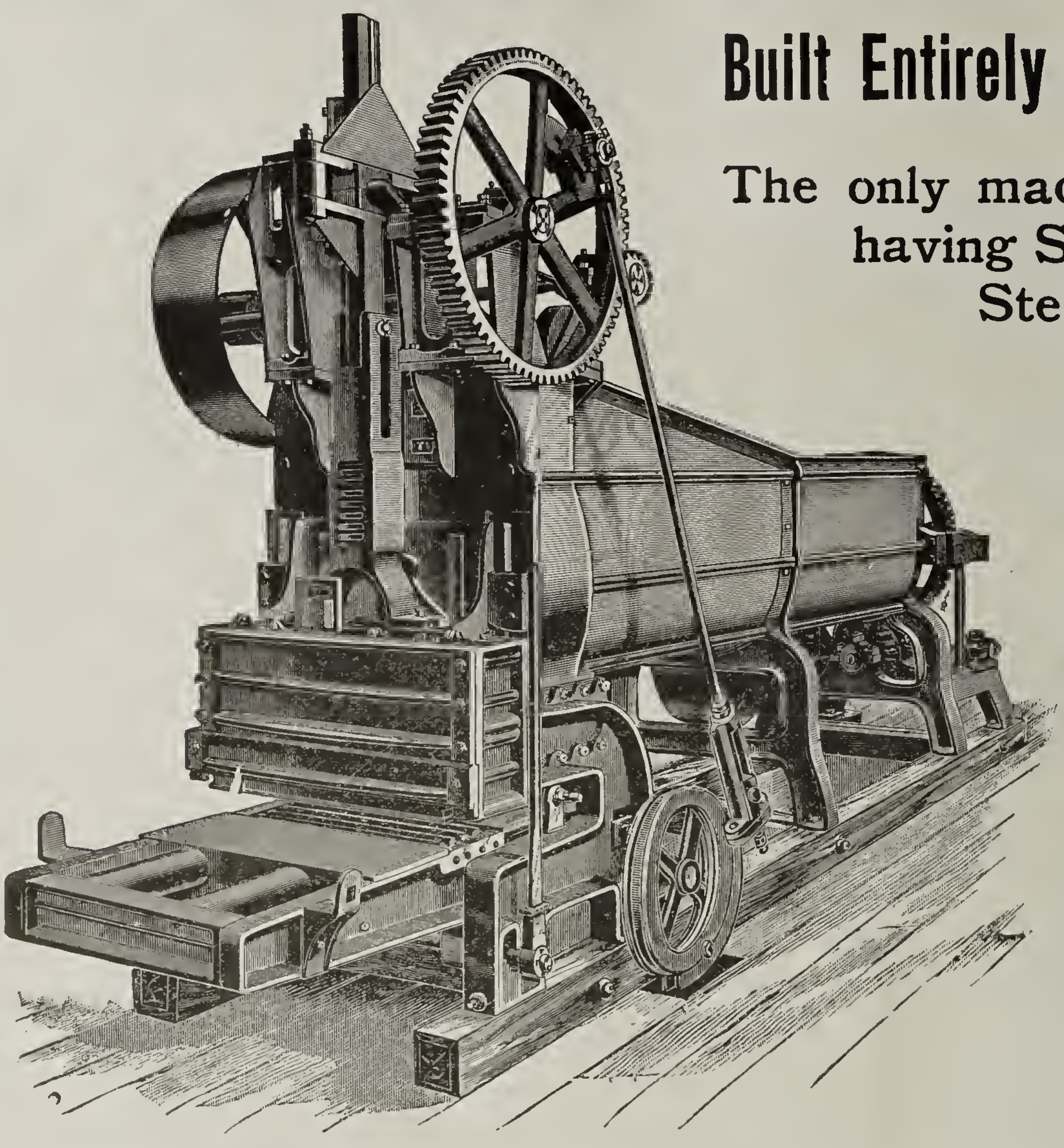
State your requirements and let us furnish particulars.

E. M. FREESE & CO.

GALION - - - - OHIO

THE POTTS

HORIZONTAL BRICK MACHINE



Built Entirely of Iron and Steel.

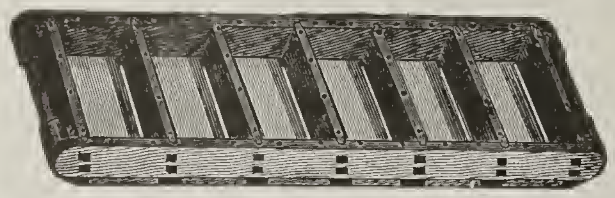
The only machine of this class
having Steel Gear and
Steel Shaft.

Built of the Best
Material by the Best
Workmen.

Simple, Strong and
Durable.

No extra pug mill required to enable working the clay direct from the bank. Its great strength enables working the clay as stiff as practicable, insuring brick which will be STRAIGHT and SQUARE.

THE LEADER OF ALL SAND MOULD MACHINES.



BRICK MOULDS A SPECIALTY

QUALITY IS OUR AIM.

We manufacture a complete line of Brick Yard Supplies. Write for prices.

C. & A. POTTS & CO., Indianapolis, Ind.

Compound Disintegrators and Crushers

As Manufactured by Potts

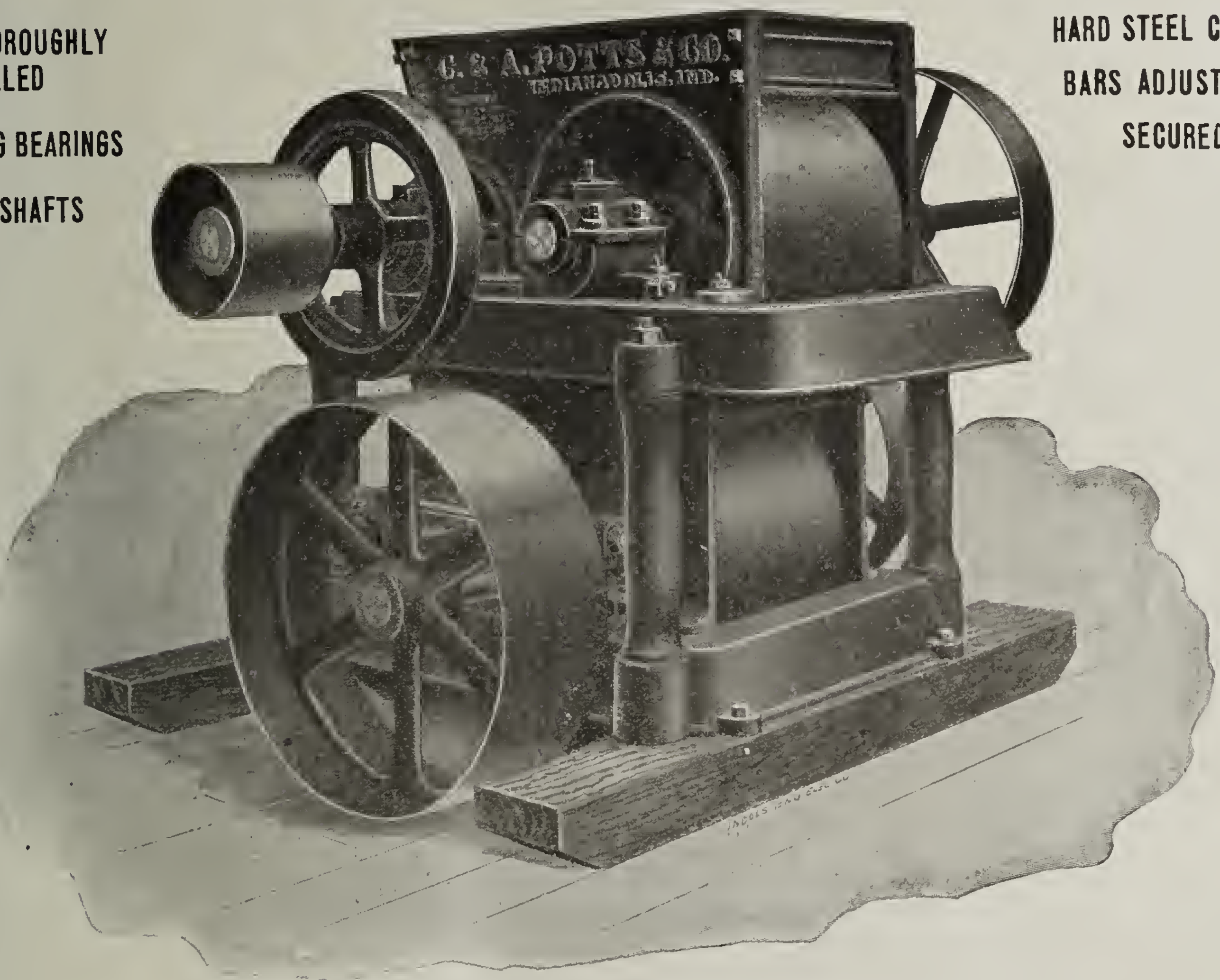
Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

ROLLS THOROUGHLY CHILLED

RING OILING BEARINGS

STEEL SHAFTS

HARD STEEL CUTTING BARS ADJUSTABLY SECURED


C. & A. POTTS & CO.
INDIANAPOLIS, IND.

Compound Disintegrator and Roll Crusher
These Machines are made only with RING OILING BEARINGS.

Potts Disintegrators will work the clay direct from the bank. Will not choke or clog from hard, dry or wet, sticky clays. The MOST GENERALLY USED Machine on the market.

Built to Do the Work

Manufactured by

C. & A. POTTS & COMPANY
INDIANAPOLIS, IND.

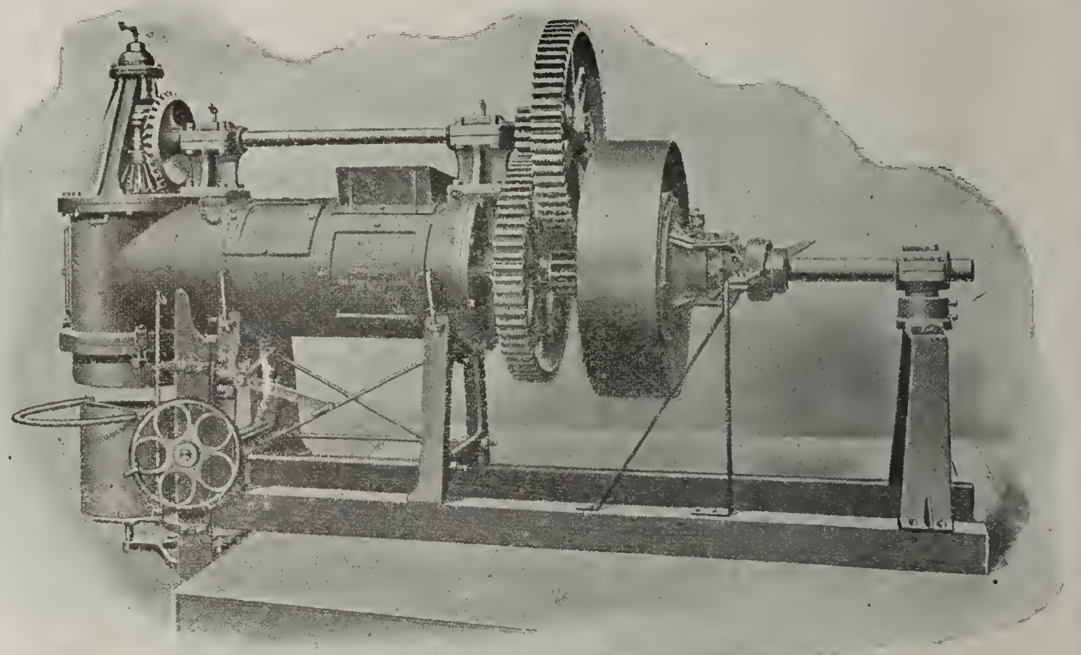
1908 NEW DEPARTURE

The Only Mill for Successfully Making Tile from 3-inch to 24-inch Diameter

Greatly Improved in Strength and Convenience

Capacity Increased 60 per cent

Power Required to Operate, 40 per cent Less



Our New 1909 Model Anderson Giant

We also Manufacture a Complete Line of

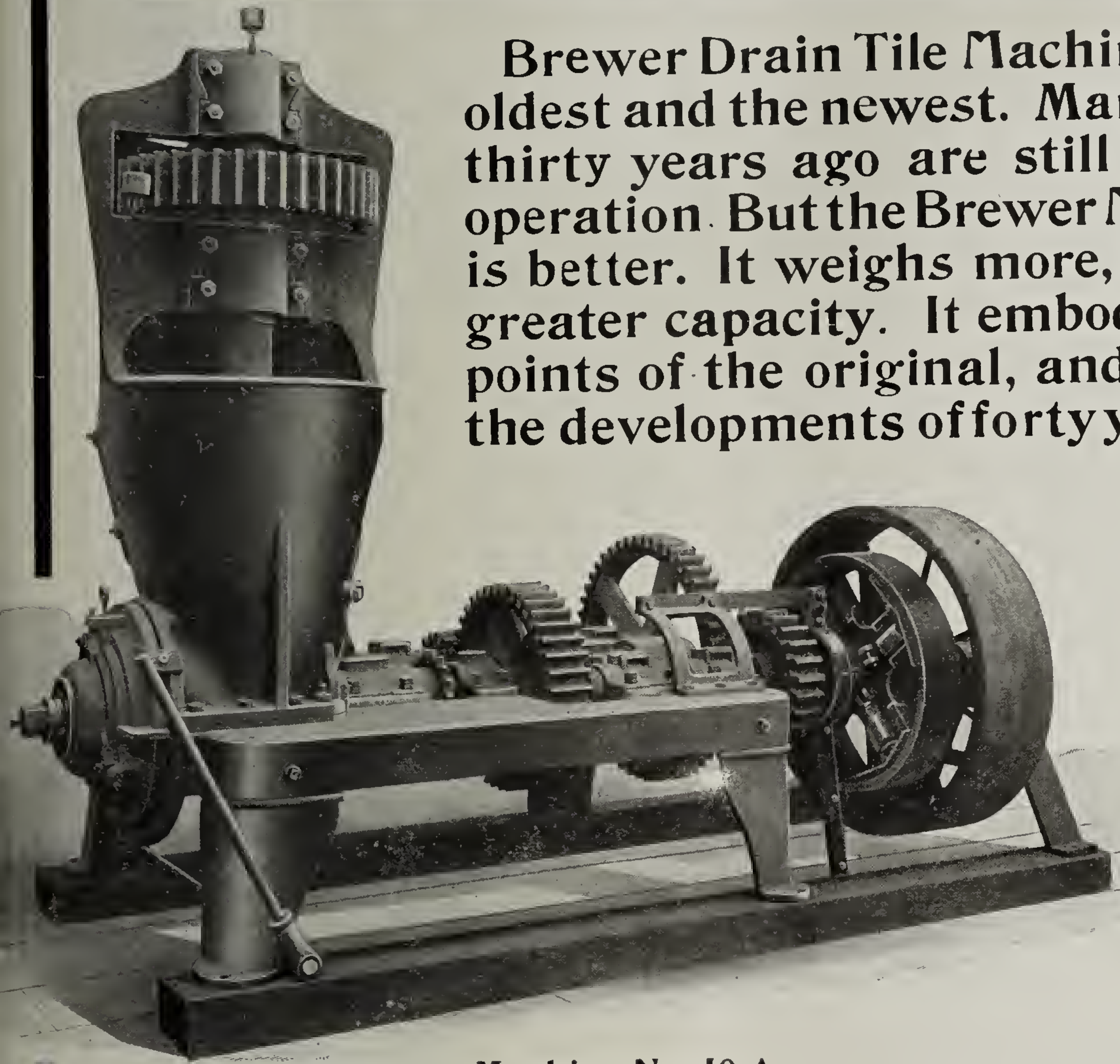
Dry Press Brick Machinery and Brick Yard Supplies

Write us your needs and let us figure with you.

The
Anderson Foundry & Machine Works
Southwestern Office, Wilson Building, Dallas, Texas. ANDERSON, INDIANA

DRAIN TILE MACHINES

Brewer Drain Tile Machines are both the oldest and the newest. Many of them built thirty years ago are still in satisfactory operation. But the Brewer Machine of today is better. It weighs more, is stronger, is of greater capacity. It embodies all the good points of the original, and has added to it the developments of forty years experience



Machine No. 10 A

We Build Three Sizes

ranging in capacity from 1000 4=in. tile per hour up to all that can possibly be handled by any present day method. They range in weight from 5500 to 10500 pounds. The upright portions are cast in one piece and machined to the frame. The frame is cast in one piece. The knives are forged from hard, high=carbon steel.

The augers and casings are of white=iron. The cores of tile dies are held without bridge or bracket, or anything which parts the clay as it is being formed into shape. They make good tile where other machines fail.

If Marked
BREWER
It's Good

Our catalog explains all about them and gives detailed specifications

H. Brewer & Co.

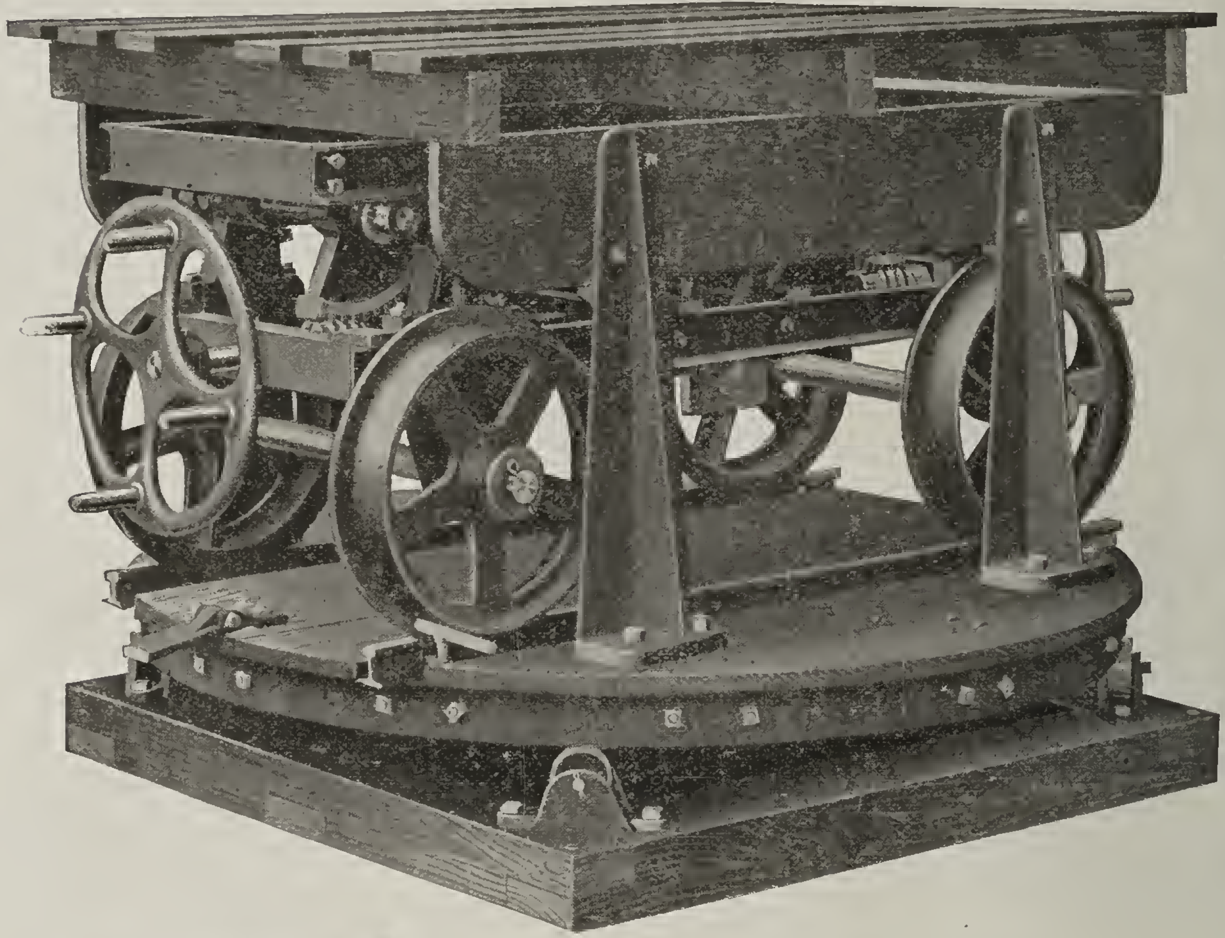
TECUMSEH, MICHIGAN

If Marked
BREWER
It's Good

THE GUILDER ELEVATING AND LOWERING BRICK CAR

And Turn Table Used with Same

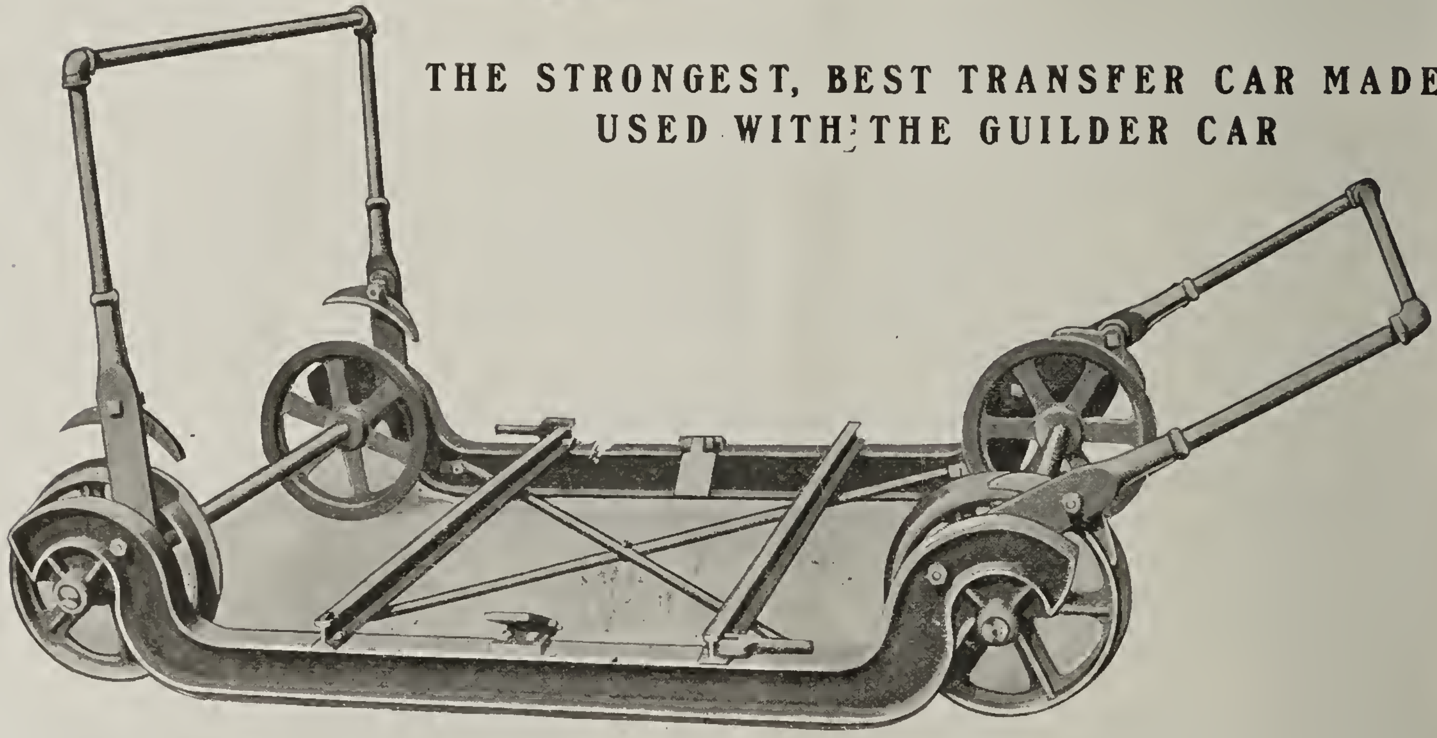
The most perfect car of the kind made. Easy to handle. Operated from either end. All iron and steel. Raised and lowered by Worm Gear and Segment.



No Charge for plans or for the right to use this system.

Pay only for what you get and nothing for a piece of "Blue Sky."

THE STRONGEST, BEST TRANSFER CAR MADE
USED WITH THE GUILDER CAR



Write to the J. D. FATE CO., Plymouth, Ohio, about this system

Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXIV. No. 11. CHCAGO, JUNE 15, 1909 Semi-Monthly, $1.00 per Year
Single Copies, - 10 Cents

WHAT GENERAL ADVERTISING COULD DO FOR THE BRICK MANUFACTURERS

By Herbert L. Houston, New York City

It is a great pleasure to meet the makers of brick. In your presence the mere publisher, realizing the century-old traditions of your craft, feels to be a very modern addition to the world. Our printed page is a descendant, through long evolution, of the papyrus of the Egyptian, while your brick and the brick of the Egyptian are essentially the same. There must be some subtle flattery in the thought that your material is so good that it has been hard to improve it in the long stretch of time since it was first used. As it has been so difficult to improve the product, you have been busy improving the process with the result that brick making has kept pace with the march of industry.

But it would be strange indeed if a material that has changed so little from early Bible times until now had not bred a sort of unconscious conservatism in its makers. The other night I heard that wonderful opera of Saint Saens, "Samson and Delilah." In one scene Samson was turning the crude wooden mill mixing clay for his Philistine captors. It was startling to recall that I had seen, as a boy, much the same kind of grinder, save that a horse instead of a man was making the weary round at the end of the sweep. And I presume there are some mills of the same fashion still in use in this modern day of scientific machinery in clay making. In no industry, probably, has there been so little change in material, and in manufacture also—at least until very recent times—as in yours. Such stability has of necessity produced a certain element of permanence in everything pertaining to brick making. Will you pardon this simile, made in the most friendly spirit: With so many brick walls standing over the earth through the long centuries it would have been simply marvelous if they had not gathered some moss. Of course they have, as a witness to their durability if to nothing else. I can quite understand how the brick maker, when he recalls the ancient Egyptians inscribed prayers for the dead on bricks to entomb in the sarcophagi with the departed, knowing they would last forever, should feel that his product was nearly perfect. But at last he learned that he could make it cheaper and of more uniform quality, by the use of machinery. And now Samson pushes the sweep only on the stage, and the poor horse follows the beaten path in fewer sections every year.

What you have done, gentlemen, is to modernize your processes of manufacture up to the very last minute of industrial development. You have cheapened production and greatly increased it, by lengthening your brick making season to the whole year, instead of a few months, as in the days of the open kiln. But haven't you still laid to your souls the flattering unction that your product was so good that it would sell itself? Don't you continue to believe that bricks are the best building material that the world has known, and that it is so much the worse for the world if it doesn't believe as you do? But have you stopped to consider that the world is busy with so many other things that it may not come to believe as you do unless you take the pains to tell it why you believe as you do and satisfy it that your reasons are sound? And if you neglect to do this telling, what if the makers and believers in some other material start in with enthusiasm and energy to convince the world that their material is the best? You know without my stating it what would happen. Indeed, you know better than I do what *is* happening right at this very time.

I am sure I need not dwell at length before a convention of brick manufacturers on the fact that a mighty Vulcan has arisen in the shape of the concrete industry and that it is pounding away on the anvil of publicity until the welkin is everywhere ringing with information about concrete and its merits. Here is an industry that has a product it believes in, and it is convinced that it is worth while to advertise widely to the world, giving the reasons for its belief. And you know what amazing strides this industry is making, increasing its annual output from

Cement Barrels.	Value.
1899— 5,652,266	$8,074,371
1900— 8,482,020	9,280,525
1901—12,711,225	12,532,360
1902—17,230,644	20,864,078
1903—22,342,973	27,713,319
1904—26,505,881	23,355,119
1905—35,246,812	33,245,867
1906—46,463,424	52,466,186
1907—48,785,390	53,992,551
1908—40,000,000*	42,000,000*

*Estimated.

Now, comparisons are sometimes edifying as well as odious, and I cannot refrain from quoting from one of your trade papers the figures showing the growth in your production. In the past ten years the output of brick has been a little more than doubled, going from $74,000,000 to $159,000,000. You will say that that is a good record of growth. and it is. But you are not satisfied with a good brick—*you want the best.* Growth is relative in this competitive age. If a rival industry in the great building material field is growing faster than you, you will grant that you are not growing fast enough. You may not concede that much to me, but I feel sure you will admit it to yourselves. A brick manufacturer said to me in New York the other day that it was getting to be provokingly common to be told by architects, when he called to present the advantages of brick for a particular house that was being designed, that the owner had specified concrete. Please note and weigh carefully the meaning of that statement—*the owner had specified concrete,* not the architect, but the man who employed the architect and decided for himself the building material to be used—the owner. You will grant at once that he is the man you want to reach. And, gentlemen, I came here today to tell you how to reach him, effectively, economically, surely.

---

* A paper read beforethe Twenty-third Annual Convention of the National Brick Manufacturers' Association, Rochester, N. Y., Feb. 1-6, 1909.

What a fortunate circumstance it is for me that we are in this fine city of Rochester, one of the most convincing witnesses in the world to the value of advertising in general and of magazine advertising in particular. As I pointed out in an address before the Chamber of Commerce here last spring, the manufacturers of this city learned early, and they learned well, that the international flag which trade follows wherever the white man goes is the printed page. And Rochester's multiplying industries, her growing commerce and her millions of stored-up wealth give the answer as to whether the lesson was worth learning. Does any one suppose for a moment that George Eastman could have taken photography from the dark room of the professional and given it to the world without the educational power of magazine advertising? It is because of the tremendous power of that advertising that this city has levied tribute, through profitable trade, from every country on the globe. What has been the chief factor in building up the mighty trade of Rochester to nearly one hundred million dollars a year? General advertising, beyond question. And what has this growing trade, based on advertising, done for Rochester? It has surely built up the city year by year in the steady way an oak grows until today it has a deserved fame for progressiveness and for solid character, just as her manufacturers are known the world over for quality. And what a broad place this sound growth through advertising, has given to this city's prosperity! During the stringency of a year ago not a bank in Rochester closed its doors and not one suspended payment of real money. What convincing witness this bears to the productive power of advertising. Here is a city whose trade is the world, a field fairly won by advertising articles of high quality direct to consumers, the ultimate market.

Gentlemen, what Rochester has done as a city through the broad-sighted wisdom of her manufacturers you can do as brick manufacturers, through your national organization, in appealing direct to consumers. Through the magazines you can make an appeal to the men and women who wish to build homes and to the business men who wish to build stores and factories. You can carry forward a great propaganda in behalf of brick as a building material, pointing out its durability, its decorative quality and its fireproof quality, indeed, all the superior advantages which brick has as a building material.

And have you ever stopped to think how economically such a campaign of education can be carried on in the magazines? Not long ago the Quoin Club, which is made up of the managers of thirty of the leading periodicals in the country (whose representative I am here today), made an estimate of the comparative cost of printed matter as it is sent out in circulars and booklets for publicity effect and the printed advertisement as it appears in the leading periodicals. The total monthly issue of all sorts and kinds of publications at the last census was 40,000,000 copies. Of this great total 10,000,000 a month is a very modest estimate for the general magazines. Suppose an advertiser should send a circular to each of these ten million readers? If the magazine publishers donated their mailing lists, did his addressing free, gave him the circulars and envelopes for nothing and charged only penny postage, instead of the ordinary two-cent postage on a letter, it would cost that advertiser $100,000 to speak to these readers once. But suppose the advertiser put a page advertisement in each magazine instead? In this case the publishers would furnish everything except a simple charge that would correspond to postage and the highest possible gross cost for an ordinary magazine page in these ten million copies would be but one-tenth of this postage charge, or $10,000. The first named postage bill of $100,000 would practically pay for a page in every one of these periodicals each month for an entire year. This is one graphic way of showing the difference between mere advertising in the way of printed matter and the printed word which is advertising in an established periodical. Mere printed matter has many other limitations, as you are fully aware, such as the difficulty and expense of securing lists, the fact that a circular must depend wholly on itself in claiming the attention of a reader, instead of having all the collateral points of contact and of appeal which a magazine possesses. People read magazines through and keep them not for a day but for a month, and, indeed, for many months. Instead of something to be dodged, as a circular often is, the magazine is usually an old friend, to be taken out of the wrapper in pleasurable anticipation or to be picked up from a news stand the day its familiar cover appears.

This whole question of the cost and effectiveness of printed matter as compared with advertising in general periodicals was carefully considered by the Republican National Committee four years ago. The analytical mind of George B. Cortelyou, then chairman of the committee, quickly decided that the magazine, in both cost and effectiveness, had a great advantage. As a result four-page advertisements were printed in millions of copies of national periodicals at a much smaller cost than postage alone would have been had they been sent out as circulars. During the last campaign the same question was decided in the same way by the present chairman of the committee, Frank H. Hitchcock. For only a small fraction of the postage charge on printed matter effective advertising was sent into every home in the country, bound up with all that is best and most interesting in art and letters, and independent public discussion—in the magazines.

In an educational campaign, such as I believe your great association could effectively prosecute in behalf of the brick interests as a whole, the magazine offers the natural, and, I might almost say, the necessary medium. In the first place, the magazine is made for the home. Its appeal is primarily and almost exclusively to the home. Largely because of this fact the publishers of magazines have believed in the essential unity of their periodicals and on the necessity of adherence to the higher standards from the first cover to the last. Following out this belief they have excluded from their pages whisky advertising, patent medicine advertising, mining stocks, oil stocks and other speculative announcements; indeed, they have undertaken to see that no unclean or doubtful thing should be borne in their pages over the threshold of American homes. This sense of trusteeship which the publisher recognizes has built up for the magazines deep faith and confidence. And do you wonder, gentlemen, that the millions of magazine readers have come to rely with such assurance on their advertising pages when the publishers accept their responsibilities so seriously? And who can over-estimate the value of that confidence as an asset in advertising? What tremendous force it puts behind the magazine advertisement, giving it in a very real sense the sanction and the support of the magazine itself!

To you brick manufacturers, therefore, the magazines of

America offer a medium through which you may send your message in regard to brick as a building material and have that message received with confidence. You can make your appeal through the magazines to intelligent and progressive homes of the country. This is precisely what the concrete interests *have been doing,* and *are doing,* and *are planning to continue to do because they have found it profitable.* It is precisely what many advertisers associated with building in different ways have long been doing, and with great effectiveness. Look at the great campaign of the National Lead Company and of the Sherwin-Williams Company in behalf of paint and white lead in the general periodicals. Consider the marvelous growth of the Standard Sanitary Company since it began its advertising direct to the consumer in behalf of their bath room and plumbing equipments. I could occupy a considerable part of the time allotted to this address by simply giving you the names of advertisers who have gone direct to the builders and owners of homes and met with great success. Right this very month in some of the general magazines which are members of the Quoin Club there are four or five pages of advertising from various concrete and cement companies. Is it fair to assume that the results which building material and building accessory advertisers have demonstrated can be secured through advertising would not come to the brick interests if they should undertake an advertising campaign? I am sure you will grant that in no process of reasoning known to logic or analogy could such a conclusion be reached. If you have a material that you believe in, *and you have,* and it is capable of widespread use, *and it is,* how could it fail to be profitably advertised if advertised directly to the whole country in a broad way? Think how suggestive and informing such advertising pages could be made. Attractive residences for both country and town could be shown built of brick. Factories and stores and public buildings and churches could be reproduced that had been built of brick. In order to give breadth of geographical appeal to this advertising it would be wise to use homes and churches and business buildings from the various parts of the country. Of course, this could very easily be done. And what a wealth of material you have and how interesting and attractive such advertising could be made. I am reminded of this when I think of a visit I had the good fortune to make, on a day in June, to one of the earliest English country houses—built in 1520 of brick, of course—Sutton Place in Surrey, near Guildford. And I bore away from my hostess, as a souvenir of the visit, "The Annals of Sutton Place," a great and beautiful volume written by Frederic Harrison. I was looking it through again, as I was preparing this address, and it brought fresh to memory the soft richness of the brick and the decorative beauty of the famous terra cotta ornament over the doors and in the arabesque work in the mullions of the stately mansion. And I read in the preface these words of Harrison: "During the last eighteen years I have often found in Sutton Place a time of peace and quiet thought: and pacing up and down the court, and watching the hues of russet and orange in the mouldings, or the evening light as it gleamed through the jeweled quarries in the oriels, I became curious to know a little more about the builders and the building of it."

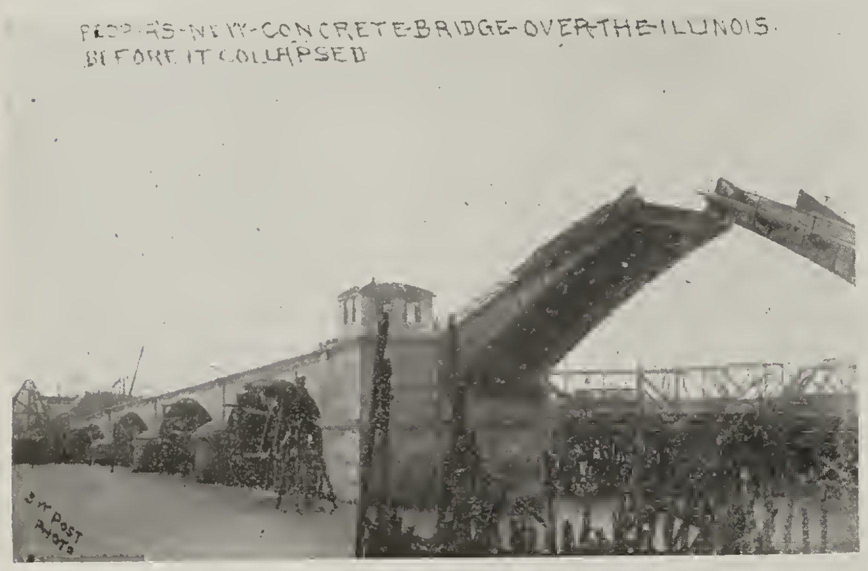
And in this great book Mr. Harrison tells in a very interesting way what he found out about the builders and the building of Sutton Place—and a most delightful account it is. In it all and through it all, both in beautiful illustrations and attractive text is *the story of brick* and *the beauty of brick* and *the durability of brick.* Just think what you could do by putting in a page announcement each month in the leading periodicals, all that can be said and pictured along these same lines, and think what a tremendous propaganda you would spread over the whole country by so doing.

But very likely right at this moment you are pointing an interrogatory at me, asking *what of all this and how can it be done?* I confess it does not appear to me to be difficult, and even if it were difficult the great goal of widespread publicity in behalf of brick is something that is worth striving for. Why couldn't you levy an assessment of one per cent. on the selling price of facing brick and with the fund thus created have a publicity fund for such a campaign I have outlined? In New York City it is estimated that last year 60,000,000 facing brick were used at an approximate cost of $600,000. Such an assessment as I have suggested would give $6,000 to a publicity fund. In the whole country it surely ought not to be difficult to secure a fund, fixed by some definite assessment in order to equitably distribute the cost, of $60,000 a year. Of this fund if $40,000 were spent in the general periodicals and $20,000 used in the preparation of two or three attractive booklets in regard to brick, for clerical expense, postage and other associated expenses, you would have a well balanced and effective campaign. Within a year it would focus the attention of the whole country on brick as a building material as that attention has never been focused before. It would bring thousands of inquiries to your secretary for booklets showing the designs of country houses or town houses or business buildings, as the case might be; it would make far and away more effective the publicity work which your committee has been carrying on during the past year. And right at this point I want to say a word in reference to that publicity work. It is valuable and, to a certain degree, important, but when all is said and done it is incidental and not primary when it comes to making a market for brick. Do not deceive yourselves into believing that such free publicity will take the place of *straight, direct paid advertising.* One of the great stores in this city might just as well expect the reading notice that one of the Rochester dailies thought sufficiently interesting to print would take the place of display advertising that brings buyers and sells goods. The two things are of an entirely different sort, but each can be made to serve the other. But by all means have your work on an absolutely candid basis, so that the editor who accepts an article about brick for publication knows precisely where it comes from; otherwise, he is sure to feel aggrieved when it gets to his attention later—and you may be sure it will always come to his attention some time—that an article he accepted was intended by the writer to serve some ulterior purpose. I happen to know that right at this time the managers of the leading daily papers and of the leading magazines are jointly preparing a list of the press agents of various interests to the end that the editors of the daily papers and the magazines may be informed as to just what interest each press agent is serving. Now this does not mean that the daily papers and magazines will decline to run interesting matter about anything of legitimate human concern. It does mean that publishers, in their own behalf and in behalf of their readers, will insist that there be proper publicity concerning publicity men. And you will grant at once that this is in every way right and proper. Whether it has any bearing on your work in this association or not, I am sure you will be glad to have the information I have given you.

In closing, let me say for the magazines that if they can offer any suggestions or advice that will serve you they will do so with pleasure and promptness. If I can personally supply any detailed information to your publicity committee or to the convention I shall do it gladly. The magazines believe they hold the key to the national market where you wish to sell more brick. That key has been turned by your competitors and through the magazine door they have entered the great consumer market and are daily gaining a larger part of it. Are they to *continue,* without let or hinderance, *until they control it?* That will depend on whether you look *backward* over the long past toward Egypt or *forward* to the bright future in America. Gentlemen, I have no doubt as to the answer—You are Americans.

NEW CONCRETE BRIDGE OVER THE ILLINOIS AT PEORIA FALLS INTO RIVER

In an early morning of May one of the worst blows that ever happened to Peoria, Ill., was the collapse of three spans of the new $200,000 concrete bridge which spans the Illinois River and the whole structure is practically ruined. The braces that held the arches broke under strain and each of the three arches buckle. One of the piers that was considered faulty and was being doctored and bolstered up still stands, as does the draw span. So one can see that one never can tell just where the weak spots are in concrete construction. What one experienced in the work may think is safe, is found to be weak.



The Peoria Concrete Bridge and Draw

Two-thirds of Peoria's new bridge, the pride of the second largest city of Illinois, is now at the bottom of the river and of three spans nothing but the wrecked piers remains. The debris must be taken from the river as soon as possible and it might be necessary to use dynamite to remove the thousands upon thousands of tons of concrete which is obstructing commerce and in the way of building a safe bridge for the citizens on the east side of the river.

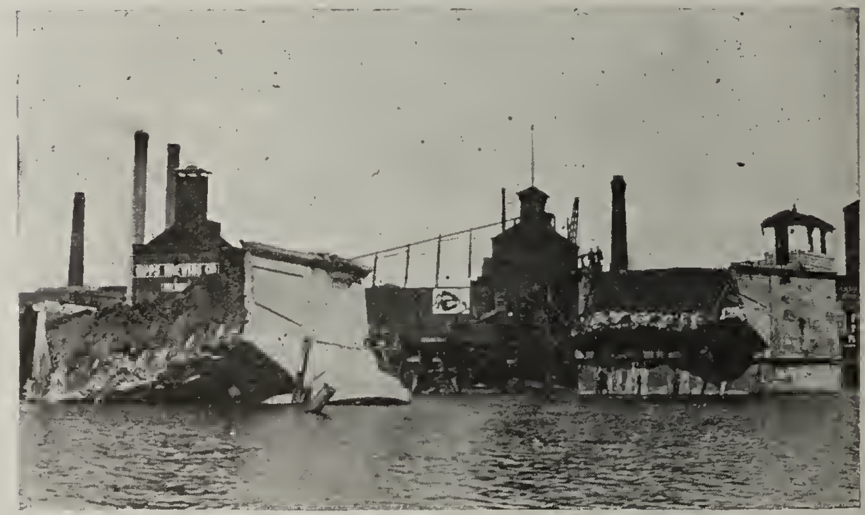
Of the rest of the structure, with the exception of the approach and the draw on the west side, and the last span with the approach on the east side, not a scrap is visible. Ribs and cement floor and balustrades, pulled clean from the piers lie in the commingled ruin under fifteen feet of water.

The destruction of the bridge occurred at ten minutes before six in the morning and the intensely spectacular scene it afforded lasted less than one minute and was witnessed by only two individuals. It seemed that in one moment the long structure stood in its entirety and in the next it had collapsed, span after span, and sunk almost noiselessly into the Illinois river. There was no roar, no great crash, only a slight tremor on the draw where James Finley, superintendent of the bridge and James Costello, night watchman, stood. An insignificant splash as the falling ruins struck the water and for an instant disturbed its surface and then the water flowed on as if nothing had happened.

On account of the early hour no one was upon the bridge. Had it been later in the day hundreds of lives would have been crushed out. One huckster and his wife had just crossed the bridge and was still on the approach when the collapse occurred, and another Tazewell county farmer reined in just in time as he came upon the east approach. Had he been one minute sooner or the other two one minute later they would have gone to the bottom with the ruins.

The cause of the collapse was at once perceptible, the lower side of the first pier from the draw had sunk two feet and swayed towards the draw. This had caused the first span to buckle up and the steel ribs, unable to stand the strain, broke in the middle and down it went. As the first pier swayed it pulled the ribs out of the second pier, letting the span fall and in turn the ribs were torn from the third pier and the third span followed the others. All the breaks were clean and not a vestige of the ribs was left hanging to the piers and the entire mass that fell away went down in compact heaps, leaving nothing above the water.

The superintendent of the construction had entertained some fear as to the condition of the first pier east of the draw which caused the collapse, but he had no idea that it would give way. It had been slowly settling since the bridge had been opened for traffic three weeks before, but it appeared to have reached a safe foundation and he believed the danger had passed. A similar condition at the east pier of the structure was noticed and an attempt was made to strengthen it by a coffer dam, driving piling and filling in with concrete, but the job was not successful. Nevertheless this pier still stands, while the supposed to be reasonably safe one wrecked the bridge.



Piers of Fallen Concrete Bridge

Up to date it has cost the city of Peoria $229,608.97 to attempt to build a bridge across the Illinois river at Bridge street. The contract for the erection of this bridge was let to the Marsh Bridge Co., of Des Moines, Iowa, for $137,000, later an additional contract was let for $13,280 and $50,000 respectively, and $10,000 later for repairs on the piers. In the history of American municipalities there is probably recorded no instance where more errors were made than in the building of the bridge that fell into the Illinois River. The thing was conceived in imbecility and born in idiocy. Throughout the entire transaction the city was worsted at every turn. The bonds were not worth the paper they were written upon.

Five thousand dollars was paid to the Concrete Steel Engineering Co. for plans and specifications and the supervision of the work, a bond was given which afterwards developed was a guarantee for the erection of the bridge according to plans and specifications and was not a guarantee of the plans and specifications. The Marsh Bridge Company failed and then the bonding company went into the hands of a receiver. The bridge is now a total wreck and the city must stand the loss.

Well may some one inscribe on one of the useless piers, "Sacred to the memory of Peoria's Concrete Bridge, 1909."

A Wrecked Pier of the Peoria Concrete Bridge

HOLLOW TILE CONCERN DENIES REVISERS FAVORED THEM

The National Fireproofing Company, whose hollow tiles will be used in larger volume than ever if the proposed new New York building code favored by the majority of the Code Revision Commission becomes a law, issued the following statement, signed by H. M. Keasbey, vice-president and general manager:

As far as the criticisms of the proposed building code concern this company's alleged attempt to obtain a monopoly, and we certainly will not enjoy anything approaching one under the new code as now drafted.

In the first place, there are more than a dozen active competitors of this company in the manufacture and sale of hollow tile doing a successful business in New York. Our company has been in existence twenty years, and during all that time has been subjected to active competition. To say that the concrete industry is divided among many concerns and that the hollow tile industry is controlled by one is therefore grossly misleading.

The proposed code, moreover, does not put safe concrete construction at a disadvantage. Our company itself installs concrete as well as hollow tile fireproofing, and we are now putting in the floors for the new Pennsylvania Railroad terminal, one of the largest concrete construction contracts ever undertaken. We do not oppose concrete construction of the kind that the leading engineering authorities have sanctioned.

The building code recommended by the National Board of Fire Underwriters—drafted by insurance and engineering experts of the highest standing—specifies only stone concrete. It excludes cinder concrete from its specifications defining fireproofing construction. In both England and Germany the use of cinder concrete is forbidden in certain classes of buildings.

The demand from concrete concerns that cinders be put on the same basis as stone, in the proposed code, arises from the fact that cinders are relatively cheap. For concrete purposes they are inferior, as well as cheap, and that this is the verdict of the highest authorities is proved by the forms of construction, adopted for the newest and safest "skyscrapers" in lower Manhattan.

Those who are anxious for the recognition of cinder concrete allege that the new code gives undue advantages to hollow tile, but the facts do not bear this out. On the contrary, the specifications for tile floors are made much more strict than they have been under the existing code. For example, the existing code contains no provisions as to the number or thickness of the "webs" in hollow tile floors; the effect of the proposed code, if enacted, will be to increase both the number of "webs" and the thickness thereof.

Again under the existing code a thickness of two inches for hollow tile column covering is deemed sufficient, but the proposed code will require a thickness of four inches. These are only two instances illustrating the general tendency to increase the requirements for fireproofing.

As to all other criticisms of the code—those regarding standpipes, paint, etc.—I know nothing, as these features do not concern our company, but I do know that the fireproofing provisions will not have the result of giving us any unfair advantage.

A Monument for Peoria Tax-Payers

TEN THOUSAND POTTERS PICNIC

East Liverpool, O., June 7.—The annual outing of the National Brotherhood of Operative Potters was held at Rock Springs park today. Between 8,000 and 10,000 potters from East Liverpool, Wellsville, Toronto, Steubenville, Sebring, East Palestine, Salem, Carrollton, Beaver Falls, Kittanning, Ford City, New Castle, Chester and Newell were in attendance. Sebring sent the largest delegation, more than 1,000 potters. An athletic program furnished the attractions in the afternoon, including races and a ball game, for a trophy cup, between the Sebring and Kittanning locals.

CLAY MANUFACTURERS SHOULD SUPPLY ALL KINDS OF CLAY GOODS TO BUILDERS

The manufacturer who can supply the wants of his customers with a number of clay commodities has an advantage over his competitor that is an appreciable one. There are instances of where orders can be taken for supplying all the various kinds of clay specialties in a contract where the manufacturer is able to do so. This has been demonstrated to the satisfaction of those who are thus situated, and it is a factor that is worthy of due consideration. Let us take for instance the erection of a large building in any locality. The present day demands and needs cover clay brick, hollow tile fireproofing, terra cotta roofing tiles, fire brick, flue caps, flue linings, terra cotta ornaments, and very frequently sewer pipe.

Not every building will call for all these commodities, but on the other hand most of them require a number of the above items, and there are few concerns who are in a position to meet these needs. When a contractor knows that he can get all or at least a great portion of his needs from one concern, there is very likely to be more consideration given that plant, where other things are in keeping with the demands of the contract, than would be the case otherwise. It is true that in order to have claim upon an architect or contractor for the times enumerated there must be merit in the goods that are offered for sale. This is the most essential consideration that the clay manufacturer has to consider.

Viewing the matter from another standpoint it requires a plant or several plants of more than ordinary proportions to meet these demands, but there are concerns who are able to do so, and they are proving the truth of the assertion that it can be done. Where a clay manufacturer can only take care of one or at best two needs in this age of big things, he is at a disadvantage and his opportunities are in a great measure cramped, so that he cannot compete with his larger competitors as he should. If he operates a large plant he can afford to sell his output at a closer margin of profit, and still be able, by reason of the size and variety of the orders to make a reasonable per cent. on his investment.

In bidding on contracts for work there are many things that have to be considered very particularly by the clay manufacturer, because he has to compete not only with the competitors in his own line but likewise with those who are manufacturing a different class of building materials altogether from his own. This puts a different phase on the matter, and is one that should be foremost in the minds of every manufacturer of clay goods. There is no denying the actual merits of clay materials that are manufactured in the proper way from good clay. They have stood the test of many centuries, and they are still gaining in popularity among a large number of users. But the age is one in which there is keener competition than has ever been known, and there is a tendency on the part of some manufacturers to slight the quality of their output in the hope that they can still command consideration on the part of the purchasers.

There is no greater error possible than to suppose that the truth and actual merits of any building material will not be made known to the user in a way that will mean a greater misfortune to himself than to the purchaser. This is the real secret of making a success of your undertaking. Every endeavor should be put forth in the hope that your labors will meet with just success and consideration. The manufacturer who is careful of this regard has little to fear from other sources that may be placed in the shape of competitive materials.

However, there is greater success in store for the clay manufacturer who can supply the needs of his customers with a varity of clay commodities. Concentration of one's efforts in this direction is one of the considerations that should come in for a greater endeavor. If he cannot supply all the demands that come to him, he can at least by degrees build up an increased business that will mean for him a newer and larger field of activities. It will mean also that he can bid on contracts that would otherwise be closed to him. It will mean that where the job only calls for a limited amount of materials of a varying character that he can supply these much cheaper than his smaller competitor, and still be making good.

We have in mind at this time an instance of this character that was a practical demonstration of the merits of such business capabilities, and one that netted for the manufacturer a nice order that would otherwise have been divided among a large number of clay operators. This comprised a large variety of materials that entered into one contract, and the purchaser was decidedly well pleased with the information that all his wants could be taken care of at prices and with materials that were in every way in keeping with the best on the market. It was not only beneficial from the immediate order, but also places the concern in a position to receive other orders of a like nature. Had the case been otherwise there would have been far less satisfaction on the part of the contracting party.

Aside from this idea of compact orders, there is a field that covers all kinds of clay goods, and in this way there is an opportunity to enter fields that would otherwise be closed to the clay man who could supply one or two commodities only. He must be able to meet all kinds of competition, and having this idea in mind he will be able to operate along entirely different lines. There is something in being able to meet the requirements of the present day with the goods and with quality and promptness. The only way to improve the situation is by showing the people that you are the man who can do so with the proper kind of push, and then you will take a step in the direction that leads to that much coveted success.

ANOTHER SCOOP

In newspaper parlance a scoop means, "Beating the other fellow to it." This is what the C. W. Raymond Company, of Dayton, Ohio, did when they secured the P. L. Youngren Patents, and better, his knowledge of the Continuous Producer Gas Kiln business, but what to call the latest stunt performed by this live company seems to be beyond the limit of language, for they have just contracted with the Hydraulic-Press Brick Co., of St. Louis, Mo., to furnish six Youngren Producer Gas Fired Continuous Kilns, the first of which will be located in St. Louis.

This order of the Hydraulic Company entails one of the largest investments ever contemplated at one time in the clay working industry, for it not only means the erection of the six kilns, with a total capacity of a half million a day, but means the abandonment of the ordinary kilns, which have already cost several times more than the continuous kilns they are now building.

The Hydraulic Company figures the saving in fuel consumption will take but a short time to pay them large dividends on their investment.

This is the third big scoop the Raymonds have made in the last eight months, the first being a big government contract to which was added the equipment for the U. S. Ceramic Laboratory at Pittsburg, the second one, the securing of the well-known Youngren Patents after fierce competition, and this, the third, being the largest continuous kiln order ever placed in the clay working industry.

We will have to take our hats off to Dayton, Ohio, for with the Raymonds and the Wright Bros., making brick machinery and airships, we certainly concede that there is a bunch of "live wires" there.

MARTIN W. LAUER AGAIN TO THE FRONT

The first of this month Martin W. Lauer was advanced to the position of manager of the Chicago Sewer Pipe Co., at Brazil, Ind., to succeed R. H. Morrish, who has held that responsible position for the last sixteen years. The owners of this property, Messrs. Joyce and Page, of Chicago, have been very fortunate in being able to secure the services of Mr. Lauer.

He is now in full charge of the works and his family will move to Brazil from their splendid home at Wilmette, Ill., the first of September. While his many friends of Chicago and Wilmette regret the loss of Mr. Lauer, the citizens of Brazil will profit.

Mr. Lauer has been a pioneer in hollow tile and has been a booster for this product for the past ten or twelve years. He was formerly associated with B. E. LaDow, in the Chamber of Commerce Building, Chicago, and had charge of the hollow tile department, after Mr. LaDow moved to Kansas he organized the American Clay Products Co., with offices in Chicago and works at Roanoke, Ill. He has been president of this company since its organization. He completely rebuilt the plant at Roanoke, which was purchased by the company so that while it is not one of the largest plants in the state, it is built and operated so as to get out the material at an exceedingly low cost. Two years ago he took charge of the sales department of the Chicago Sewer Pipe Co., maintaining an office in the Unity building, Chicago, adjoining the offices of the owners of the plant.

MARTIN W. LAUER
Manager Chicago Sewer Pipe Company, Brazil, Ind.

Mr. Lauer is a member of the Illinois Clay Manufacturers' Association and rarely misses a meeting. The records of that association show that he has contributed much valuable information to the association. He is an able speaker, a deep thinker and great student. The banquets of the Illinois Clay Manufacturers have often been graced by his presence and greatly benefited by his remarkable entertaining qualities. The Illinois Clay Manufacturers rarely have the opportunity to listen to as clever an after-dinner speaker as Mr. Lauer and often at home he is called upon to deliver some public declaration. Such days as Washington and Lincoln birthdays and the Fourth of July always find him busy.

There is no doubt that Mr. Lauer will fill the bill and take care of the new responsible office to the liking of Messrs. Page and Joyce, and they can rest assured that the business will be carried on in the same conservative way in which it has been carried on for years.

THE PLANTS THAT PUT BRAZIL, INDIANA, ON THE MAP

There is no place among the Brazil "clay men" for the pessimist, no matter how dull the times, or how low the prices, the pug mill grinds merrily away, the goods are made and burned and if there are no orders ahead, the goods are placed on the yard, ready for the buyer, at a moments notice, whenever he appears on the scene.

Despite the general dullness last year in all lines of business, and which was especially noted in the building business, the factories continued to smoke and the whistles demonstrated the fact that the factories were very much alive.

This spring they are all running with excellent prospects for a good year's business.

The Clay Products Company, which furnishes immense quantities of conduits for the Chicago City Railway Company and The Commonwealth Edison Company, have more orders than they can fill, including a large order from Uncle Sam for conduits to be used in the Panama Canal. Mr. H. L. Titsworth, the genial and hustling president vibrates between Chicago and Brazil. His headquarters are in Chicago.

At the Weaver Clay and Coal Co.'s plant, extensive improvements have been made by the McCrea and Brown Co., who purchased it. Many of the old buildings have been torn down and replaced by modern fire-proof structures. In addition to their hollow block manufacture they have put in a large 40x50 sewer pipe press and a patent conveyor, and are well equipped for their new venture, the production of sewer pipe.

The Sheridan Brick Company, formerly devoted to the making of red building brick made a complete change from a sand-mold to a stiff mud machine and added other up-to-date improvements.

The Hydraulic Press-Brick Co., which heretofore manufactured press-brick exclusively, have added machinery for the manufacture of paving brick for which there seems to be a good demand. Mr. Harry Walters, former manager, has been transferred to take charge of the Chicago office and has also been made fifth vice-president in the company

The Chicago Sewer Pipe Company are busy as usual supplying their regular trade. In connection with their sewer pipe plant the company owns and operates a wire fence factory, which reports very satisfactory results from its first year's run. Mr. R. H. Moorish is a busy man and besides these two plants has a pottery also, which however, is not in operation at present.

The National Fireproofing Company, known as the McRoy Clay Company, put in machinery for the production of sewer-pipe, including three new high-pressure boilers and two of the latest make of large sewer-pipe presses having a capacity of 150 pounds to the square inch, with which they are able to turn out immense quantities of pipe in addition to their large output of conduits.

The Indiana Paving Brick Plant is busy as usual, running with full force, with orders ahead for their famous "blocks."

The American Sewer Pipe Company are busy throughout the year keeping the market supplied with their ware.

The Indiana Fireproofing Company have their new plant at Carbon, now in operation, making several lines of ware, including sewer pipe.

The Brazil Clay Company employ a large force of men and manufacture chimney blocks as well as various other kinds of brick.

Despite the fact that Brazil is "dry" it is still very much alive, and it has been demonstrated that it is the factories and not the forty-two saloons that has kept the town going. They should receive every encouragement from the townspeople to continue in their good work .

THE SMOKELESS COMBUSTION OF COAL IN BOILER PLANTS

WASHINGTON, D. C., June 1—A bulletin on the smokeless combustion of coal in boiler plants with a chapter on central heating plants will soon be issued by the United States Geological Survey, Technologic Branch, giving in detail a study of the conditions found in industrial establishments in thirteen of the largest cities of Indiana, Illinois, Kentucky, Maryland, Michigan, Missouri, New York, Ohio and Pennsylvania, between 400 and 500 plants having been inspected. Sufficient information was collected to make the data from 284 plants of value for this report.

The bulletin, prepared by D. T. Randall and H. W. Weeks, not only shows that bituminous coals high in volatile matter can be burned without smoke, but also that large plants carrying loads that fluctuate wildly, where boilers over banked fires must be put into service quickly and fires forced to the capacity of their units can be operated without producing smoke that is objectionable. Proper equipment, efficient labor, and intelligent supervision are the necessary factors.

The burning of coal without smoke is a problem which concerns the Government directly because of the advantages of smokeless combustion both in public buildings and on naval vessels. In addition, smoke abatement is a factor in conserving the fuel resources of the United States, hence, as a part of its general investigation of the best methods of utilizing the coals of this country, the United States Geological Survey has made extended tests to determine the conditions necessary for the smokeless combustion of bituminous coal in boiler plants.

The general conclusion of Messrs. Randall and Weeks are as follows:

Smoke prevention is possible. There are many types of furnaces and stokers that are operated smokelessly.

Credit is to be given to any one kind of apparatus only in so far as the manufacturers require that it shall be so set under boilers that the principles of combustion are respected. The value of this requirement to the average purchaser lies in the fact that he is thus reasonably certain of good installation. A good stoker or furnace poorly set is of less value than a poor stoker or furnace well set. Good installation of furnace equipment is necessary for smoke prevention.

Stokers or furnaces must be set so that combustion will be complete before the gases strike the heating surface of the boiler. When partly burned gases at a temperature of, say, 2,500° F., strike the tubes of a boiler at, say, 350° F., combustion is necessarily hindered and may be entirely arrested. The length of time required for the gases to pass from the coal to the heating surface probably averages considerably less than one second, a fact which shows that the gases and air must be intimately mixed when large volumes of gas are distilled, as at times of hand firing, or the gas must be distilled uniformly, as in a mechanical stoker. By adding mixing structuros to a mechanical stoker equipment both the amount of air required for combustion and the distance from the grates to the heating surface may be reduced for the same capacity developed. The necessary air supply can also be reduced by increasing the rate of combustion.

No one type of stoker is equally valuable for burning all kinds of coal. The plant which has an equipment properly designed to burn the cheapest coal available will evaporate water at the least cost.

Although hand-fired furnaces can be operated without objectionable smoke, the fireman is so variable a factor that the ultimate solution of the problem depends on the mechanical stoker—in other words, the personal element must be eliminated. There is no hand-fired furnace from which, under average conditions, as good results can be obtained as from many different patterns of mechanical stoker; and of the two equipments the one which will require the less attention from the fireman gives the better results. The most economical hand-fired plants are those that approach most nearly to the continuous feed of the mechanical stoker.

The small plant is no longer dependent on hand-fired furnaces, as certain types of mechanical stokers can be installed under a guaranty of high economy, with reduction of labor for the fireman.

In short, smoke prevention is both possible and economical.

During 1904 to 1906 coals from all parts of the United States were burned at the Government Fuel Testing Plant at St. Louis, in furnaces which were in the main of the same design. Most of the tests were made on a hand-fired furnace under a Heine water-tube boiler. The lower row of tubes of the boiler supported a tile roof for the furnace, giving the gas from the coal a travel of about twelve feet before coming into contact with the boiler surface. This furnace is more favorable to complete combustion than those installed in the average plant. A number of coals were burned in this furnace with little or no smoke, but many coals could not be burned without making smoke that would violate a reasonable city ordinance when the boiler was run at or above its normal rated capacity.

In 1907 the steaming section of the St. Louis plant was moved to Norfolk, Va., where subsequent tests of this nature were made. The plant at Norfolk was equipped with two furnaces—one fired by hand and the other by a mechanical stoker.

In the course of the steaming tests some special smoke tests were made and the influence of various features in smoke production was noted. As the tests were made as far as possible under standard conditions with a minimum variation in boiler room labor the results bring out the importance of other factors, such as character of fuel and furnace design.

A brief summary of the general conclusion is as follows:

A well-designed and operated furnace will burn many coals without smoke up to a certain number of pounds per hour, the rate varying with different coals, depending on their chemical composition. If more than this amount is burned, the efficiency will decrease and smoke will be made, owing to the lack of furnace capacity to supply air and mix gases.

High volatile matter in the coal gives low efficiency and vice versa. The highest efficiency was obtained when the furnace was run at low capacity. When the furnace was forced the efficiency decreased.

With a hand-fired furnace the best results were obtained when firing was done most frequently, with the smallest charge.

Small sizes of coal burned with less smoke than large sizes, but developed lower capacities.

Peat, lignite, and sub-bituminous coal burned readily in the type of tile-roofed furnace used and developed the rated capacity with practically no smoke.

Coals which smoked badly gave efficiencies 3 to 5 per cent. lower than the coals burning with little smoke.

Briquets were found to be an excellent form for using slack coal in a hand-fired plant. They can be burned at a fairly rapid rate of combustion with good efficiency and with practically no smoke. High-volatile coals are perhaps as valuable when briquetted as low-volatile coals.

A comparison of tests on the same coal, washed and unwashed, showed that under the same conditions the washed coal burned more rapidly than the raw coal, thus developing high rated capacities. In the average hand-fired furnace washed coal burns with lower efficiency and makes more smoke than raw coal. Moreover, washed coal offers a means of running at high capacity, with good efficiency, in a well-designed furnace.

Forced draft did not burn coal any more efficiently than natural draft. It supplied enough air for high rates for combustion, but as the capacity of the boiler increased the efficiency decreased and the percentage of black smoke increased.

Most coals that do not clinker excessively can be burned with 1 to 5 per cent. greater efficiency and with a smaller percentage of black smoke on a rocking grate than on a flat grate.

Air admitted freely at firing and for a short period thereafter increases efficiency and reduces smoke.

As the CO in the fuel increases the black smoke increases; the percentage of CO in the flue gas is therefore, in general, a good guide to efficient operation. However, owing to the difficulty of determining this factor, combustion cannot be regulated by it.

The simplest guide to good operation is pounds of coal burned per square foot of grate surface per hour.

None of the problems of combustion have received more experimental treatment than the burning of coal in hand-fired furnaces. Hundreds of devices for smokeless combustion have been patented, but almost without exception they have proved failures. This record may be explained by the fact that many of the patentees have been unfamiliar with all the difficulties to be overcome, or have begun at the wrong end. Numerous patents cover such processes as causing the waste gases to reënter the furnaces, and schemes for collecting and burning the soot are legion. So many manufacturers who have been looking for some cheap addition to a poorly constructed furnace to make it smokeless have experienced inevitable failure, that the work of educating the public to rid cities of the smoke nuisance has been hard, long, and only partly successful.

The total number of steam plants having boilers fired by hand is far greater than the total of plants with mechanical stokers, but if the comparison is based on total horsepower developed the figures show less difference. Particularly is this true in sections of the Central West, where mechanical stokers are generally used at large plants. As a general rule, hand-fired plants do not have proper furnaces, and methods of operation are far from conducive to good combustion. Coal is usually fired in large quantities, and little opportunity is given for the air and gases to mix before the heating surface is reached and combustion is arrested. In all the hand-fired plants visited success in smoke prevention has been obtained chiefly by careful firing. The coal was thrown on often in small quantities; the fire was kept clean, enough ash to prevent the passage of air through the fire never being allowed to collect on the grate; and more air was supplied at firing than after the volatile matter had been distilled. Even with such precautions the plants might have made objectionable smoke at times but for the fact that usually some method was employed for mixing the gases and air before they reached the heating surface.

Some general conclusions from the facts set forth in the bulletin are as follows:

The flame and the distilled gases should not be allowed to come into contact with the boiler surfaces until combustion is complete.

Fire-brick furnaces of sufficient length and a continuous or nearly continuous supply of coal and air to the fire make it possible to burn most coals efficiently and without smoke.

Coals containing a large percentage of tar and heavy hydro-carbons are difficult to burn without smoke and require special furnaces and more than ordinary care in firing.

Briquets are suitable for use under power-plant conditions when burned in a reasonably good furnace at the temperatures at which such furnaces are usually operated. In such furnaces briquets generally give better results than the same coal burned raw.

In ordinary boiler furnaces only coals high in fixed carbon can be burned without smoke, except by expert firemen using more than ordinary care in firing.

Combinations of boiler room equipment suitable for nearly all power-plant conditions can be selected, and can be operated without objectionable smoke when reasonable care is exercised.

Of the existing plants some can be remodeled to advantage. Others cannot, but must continue to burn coals high in fixed carbon or to burn other coals with inefficient results, accompanied by more or less annoyance from smoke. In these cases a new, well-designed plant is the only solution of the difficulty.

Large plants are for obvious reasons usually operated more economically than small ones, and the increasing growth of central plants offers a solution of the problem of procuring heat and power at a reasonable price and without annoyance from smoke.

The increasing use of coke from by-product coke plants in sections where soft coal was previously used, the use of gas for domestic purposes, and the purchase of heat from a central plant in business and residence sections all have their influence in making possible a clean and comfortable city.

SAND LIME BRICK IN THE UNITED STATES

DECREASED PRODUCTION IN 1908.

The value of the sand-lime brick produced in the United States in 1908 amounted to $961,226 and represented the output of 87 plants, according to Jefferson Middleton, of the United States Geological Survey. In 1907 the output was valued at $1,225,769 and was furnished by 94 plants. The net decrease in the value of the output in 1908 was therefore $264,543.

As in previous years, by far the greater part of the total value was represented by the common building brick, whose output decreased in value from $1,030,913 in 1907 to 803,333 in 1908. There was also a decrease in the value of the front brick reported, from $188,221 in 1907 to $147,704 in 1908. Fancy brick and blocks showed slight increases in value.

RANK OF STATES.

More than 30 States reported an output of sand-lime brick in 1908, but Alabama dropped out of the list and Montana appeared. Michigan retained its position as leading State in this industry, reporting products valued at $138,809 in 1908, as compared with $172,840 in 1907. Florida stood second both years, with an output valued at $117,040 in the later year as compared with $109,275 in the earlier, a gain of $7,765 in value of product. Pennsylvania also reported an increase in value of product from $48,410 in 1907 to $64,123 in 1908. California, Indiana, Iowa, Michigan, and New York showed decreases, the largest decrease being reported by Indiana.

The largest number of plants was reported by Michigan, although the number decreased from 13 in 1907 to 10 in 1908.

PRICES.

The average price per thousand received for common brick of this character in 1908 was $6.33, as compared with $6.61 in 1907 and $6.71 in 1906; for front brick the average price was $12.76 in 1908, as against $10.96 in 1907 and $10.42 in 1906. It is apparent, therefore, that while common brick has decreased in price front brick has increased.

REPORT IN PREPARATION.

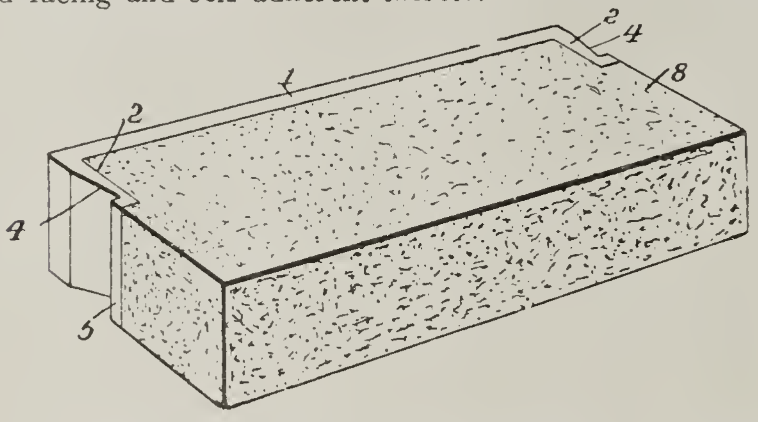
A report on the condition of the sand-lime brick industry in 1908, prepared by Mr. Middleton, will be published by the Survey in the course of a month or more. This report will be available for free distribution and may be obtained by applying to the Director of the United States Geological Survey, Washington, D. C.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

915,608. Building Block or Brick. Edward Kaye, Monaca, Pa. Filed June 5, 1908. Serial No. 436,940.

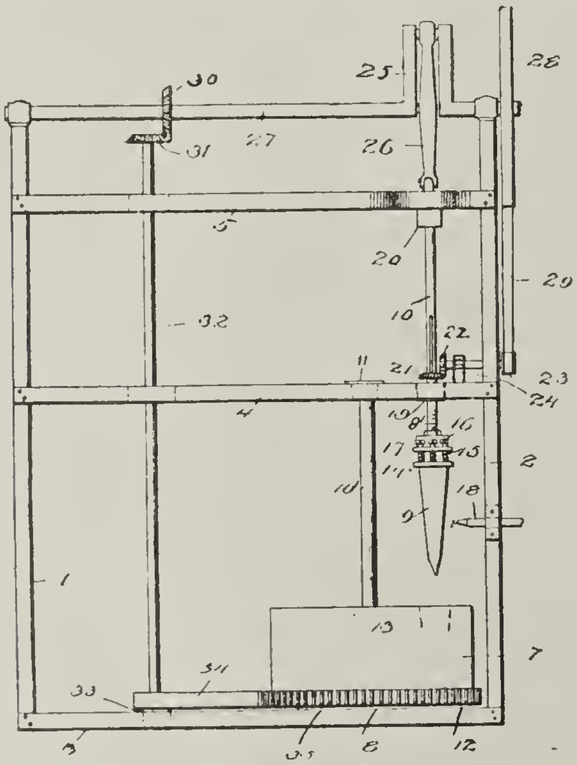
A building block composed of a vitreous facing, comprising front and end walls and a bottom, the facing being open on top, said facing being formed with a groove adjacent to and parallel with one side and extending parallel with both edges of the front in combination with a filling and backing composed of plastic material molded into and in the rear of said facing and self adherent thereto.



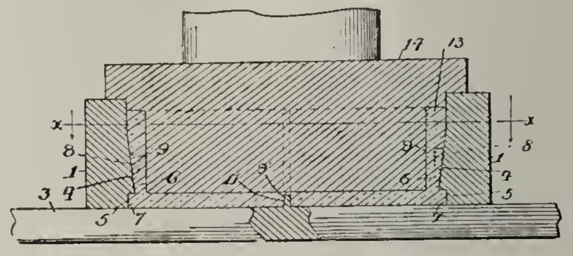
A building block comprising a vitreous facing having a bottom and end walls and open on top and a molded plastic backing extending between the end walls and in the rear thereof.

915,848. Machine for Molding Clay Condensers for Retorts. Russell Garrison and George W. Whipple, Cherryvale, Kans. Filed Oct. 19, 1907. Serial No. 398,283.

In a clay molding machine, a framework, a main shaft, a rod arranged to rotate and reciprocate therein, a pitman connected with said shaft, means connecting said pitman and rod and permitting the rotation of the latter while having a reciprocating motion imparted thereto, a plunger carried by the rod, a gear carried by the main shaft, a mold-carrying frame, means operated by the gear for rotating the mold-carrying frame, a gear slidably connected with the reciprocating rod, a gear driven from the main shaft and meshing with the gear last mentioned, a mold cover, a spring connection between said cover and plunger, an adjustable device for varying the tension of the spring, such spring-pressed cover arranged to be raised by the surplus material permitted to escape from the mold when said material has been compressed to a predetermined degree.



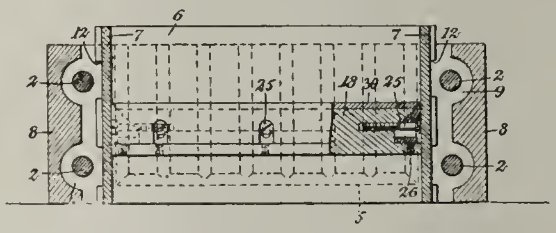
915,609. Method of Manufacturing Building Blocks or Bricks and Glass Facings Therefor. Edward Kaye, Monaca, Pa. Filed June 5, 1908. Serial No. 436,941.



The method of making building blocks or bricks consisting in forming a blank comprising a plurality of connected facings, then dividing the blank into a plurality of sections each constituting a complete facing, then applying to each facing while the facings are in hardened condition a suitable unheated filling and thereby forming a plurality of completed building blocks or bricks.

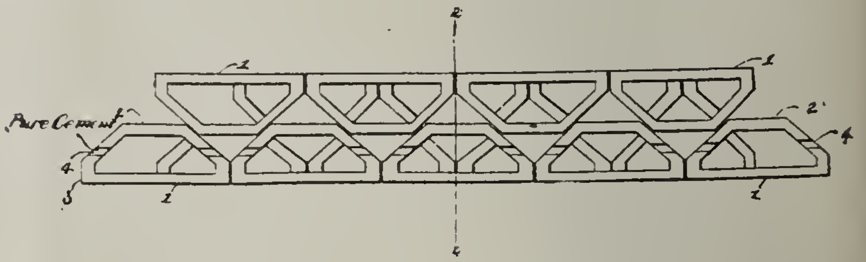
916,796. Die for Pressing Bricks. Charles E. Simpson, Portsmouth, Ohio. Filed May 13, 1908. Serial No. 432,611.

A die having side plates, channel systems formed on the inner faces thereof, side liner plates held against the inner faces of said side plates, end liner plates disposed between said liner plates near the ends thereof, said side plates having their ends projecting beyond said side liner plates, clamping bolts connecting the projecting ends of said side plates, and affording means for clamping said liner plates in position, and a metal having a low fusing point poured around said bolts between the ends of said side plates and forming a backing for said end liner plates, said side liner plates projecting beyond said end liner plates and having notches adapted to be engaged by said metal to secure said side liner plates.



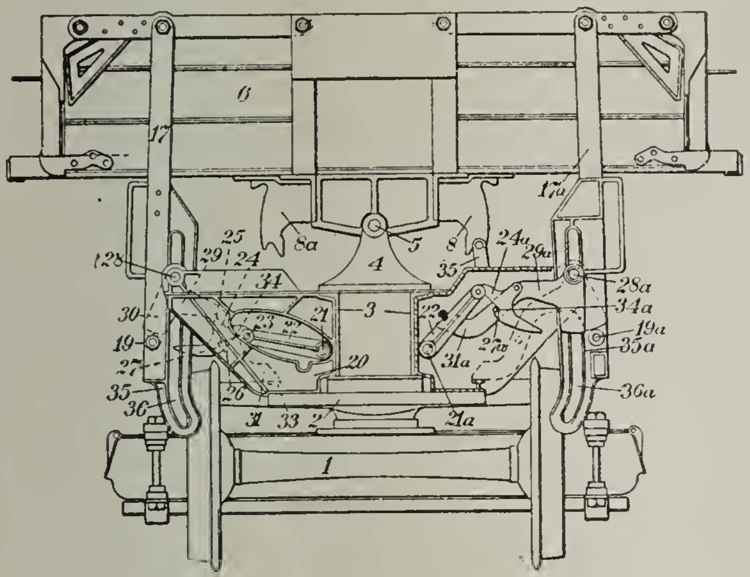
916,756. Building-Block. Charlie Mosstman and John H. Grant, Hobe Sound, Fla. Filed Dec. 6, 1907. Serial No. 405,414.

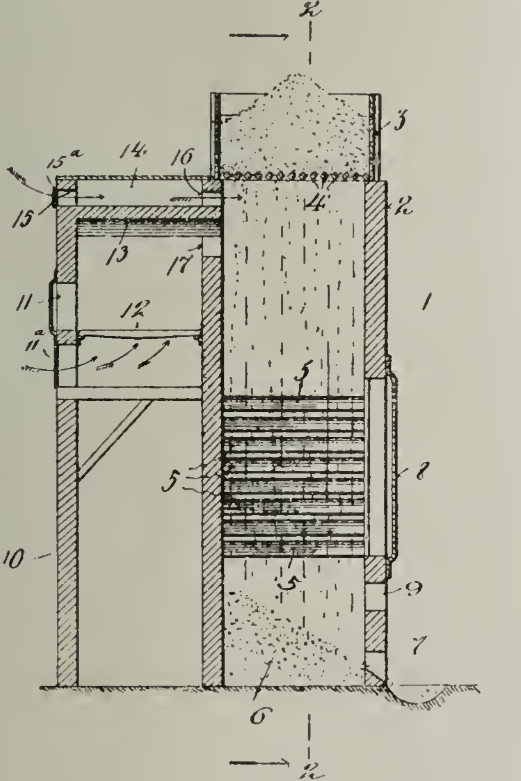
A wall construction made up of duplicate series of blocks, the blocks of each series being arranged in alinement longitudinally of the wall and having side walls of different lengths, the shorter side walls being arranged inwardly and between the terminals of the shorter side walls of the opposing series of blocks, the end walls of each block of each series being projected transversely of the block from the ends of the outer face for a portion of their lengths and then inclined inwardly toward each other to meet the inner face of the block, whereby to provide an air space beyond the shortest wall of each block throughout the length of the series of blocks.



915,419. Dump-Car. Charles H. Doty and William L. Burner, Columbus, Ohio, assignors to The Kilbourne and Jacobs Manufacturing Company, Columbus, Ohio, a Corporation of Ohio. Filed Sept. 15, 1908. Serial No. 453,201.

In a dumping car having swinging side members, a dumping arm pivotally connected to said side members for manipulating the same and having a longitudinal slot in its lower end portion, a pin mounted on said car and engaging said slot, a lever pivoted on said pin and provided with oppositely directed arms, a stop carried by said dumping arm adapted to engage one of the arms of said lever, the other arm of said lever being adapted to engage with the car, whereby said dumping arm is positively locked against an upward movement thereof, and means for lifting the latter arm of said lever whereby the other arm thereof is moved out of its locking position to permit the dumping arm to be lifted.





A sand drier embodying the following instrumentalities, a stack, means for showering sand into the stack, a furnace opening into the upper part of the stack, an exhaust for the products of combustion below the furnace opening, and an additional chamber over the furnace opening into the stack for admitting air into the stack therethrough.

CORNING'S NEW PLANT TO BE MODERN IN EVERY RESPECT

Corning is to have one of the most modern paving brick plants in Ohio. The buildings are completed and the machinery on the ground and is being set up.

It is expected that the plant will be making brick in a few weeks.

The machinery is of the most modern type and the ultimate capacity of the plant will be 50,000 paving block per day. The entire equipment and the engineering of the job from the clay bank to the kiln is an American installation furnished by the American Clay Machinery Company, Bucyrus, Ohio.

The kiln, which is now in course of construction, is the "American open top coal fired continuous kiln," and will be the first of its kind to be used in Ohio. This kiln when completed in accordance with the plans, will have a total length of 320 feet, and a capacity of 50,000 block per day. At present only part of its total length will be constructed. It is claimed that this kiln will save 66 2-3 per cent on fuel alone.

There will be used in this kiln a mechanical brick setting and brick handling device, the first of its kind to be put in use in the state. This machinery will be operated by an electric crane working on a tram-way over the top of the kiln. By the use of this machine the brick will be handled both into and out of the kiln; the brick being handled in blocks of 148 at a time and being taken in the first instance from the dryer cars into the kiln and when burned taken by it from the kiln and placed either in the storage yard or cars, or take them from the storage yard to the cars.

But three men are required to operate this machine, and they can set in the kiln 50,000 brick per day and take out the same number, thus handling 100,000 per day.

The use of this machine is not an experiment, it having been in actual use at Cherryvale, Kansas, for more than three years The company took the precaution to send their superintendent, Mr. W. H. Reardean, there, to see the machine in practical operation. He found that it would do all that was claimed for it and that the actual cost of handling brick from the dryer cars into the kiln and thence when burned from the kiln to the cars or storage yard or cars is only 11 cents per thousand.

The board of directors of the company is composed of John Holden, James Jenkins, John Amberg, Henry Kelso, Dr. E. L. Murphy, Dr. James Miller, Sidney Preest and Miles E. Joyce.

The officers are: John Holden, president; Henry Kelso, vice-president; T. M. Potter, secretary-treasurer.—*New Lexington Tribune.*

SIOUX CITY BRICK MANUFACTURER ADDS TO HOLDINGS BY GETTING CHERRY RED CONCERN

Announcement is made of the reorganization of the Cherry Red Pressed Brick Company, of Correctionville, Iowa, in which G. H. Fairchild, of Sioux City, Iowa, and G. N. Fairchild, of Minneapolis, are interested, and the plant is to be operated in conjunction with the Lower Brick Company and Sioux Paving Brick Company, of North Riverside and the Holman Brick Company, of Sergeant Bluff.

George A. Bailey and E. C. Bailey, of Correctionville, will continue as president and secretary, respectively. The plant will have a capacity of 12,000 brick daily. The capital stock has been increased from $10,000 to $50,000.

After looking over the property, G. H. Fairchild was convinced of its great possibilities, declaring that no better pressed brick is made in the west than those turned out by the Correctionville plant.

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Vol. XXXIV. JUNE 15, 1909. No. 11

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Lots of self-made men manage successfully to conceal it.

Did you send in your money for that subscription? If not do so now.

No man can give to the firm who employs him more than he has in his head.

Learn to blow your own horn if you would head the procession with the band.

Money talks and there is often a speaking likeness between the genuine and the counterfeit.

It takes a hustler to distinguish the difference between an obstacle and a hinderance in his path.

Evidence of the great building boom which is general through the country is furnished by the May permits in fifty-seven cities of the country. During the month 18,295 permits were issued to cost $76,918,950, as against 15,486 permits, costing $45,210,526, for May a year ago.

New York, with a total of $18,620,491, is at the head, but Chicago is a good second with $12,609,480, and in the number of permits is far in the lead, having 1,054, against 352 for New York. New York's percentage of increase is 145, as against 109 for Chicago.

So busy are the big Pittsburg steel mills in their effort to fill orders on time that they were operated Memorial day for the first time in many years. A building boom of great proportions is in progress, affecting not only the iron and steel industry, but the brick-making plants, the lumber yards and the producers of concrete. It is said that the Haverstraw brick works are now putting out 3,000,000 brick every 24 hours. Quite a share of this work goes to enlarge manufactories, and naturally the movement impels the railroads to increase facilities in anticipation of a rush of business to come, the locomotive shops being busy turning out big engines to haul the increased output of our farms and factories.

Mr. Fitzpatrick says: "The expert knows 'what is what,' and it is high time that the layman should be able to differentiate in at least the essentials of construction. He ought to know that granite and marble and stone and concrete and steel are damageable by fire, though not combustible. It must be evident to him that well-burned brick and terra cotta and fireproofing tile are the structural materials best calculated to stand intense heat. He should see to it that the building he erects or is called upon to occupy has all its steel members thoroughly protected with hollow tile or brick; that there is the very minimum of wooden and other combustible finish; that the stairs and elevators are properly enclosed so that each story is a separate unit, and again that that story be cut up into smaller fireproof units; that the building is protected from external attack by having its windows of metal sash and wire glass; that there is ample water supply, hose, etc., for internal protection; in fine, that the building really is fireproof in the fullest sense of the word, and only in such a building will he and his goods and chattels be safe.

Perhaps this is too much technical knowledge to expect of the layman. Then at least let him insist that the city authorities say in specific terms, "This is or is not a fireproof building." When we get our cities up to that point we will have begun the satisfactory solution of one of the greatest economic problems that confronts us, one whose imperfect solution is costing us half a billion dollars per year. The greatest and most senseless single tax to which we unwisely submit."

KENILWORTH TILE CO. CLOSES A THREE YEAR CONTRACT WITH A. S. PORTER

An important deal was closed by the Kenilworth Tile Company, of Newell, W. Va., recently, when a contract was made between Alfred S. Porter, of Cleveland, editor of the Glass and Pottery World, whereby the trade newspaper man agrees to sell the entire output of the Newell concern for a period of three years. The closing of this negotiation means an important step in the tile business of America, inasmuch as the Kenilworth company is an independent concern and is one of three plants in the United States that is operated exclusive of the tile works association. The deal places the Kenilworth Tile Company's sales department entirely under the supervision of Mr. Porter.

In addition to this change in the management of the sales department of the Kenilworth Tile Company, there is probably to be an enlargement of the capacity of the local plant. The importance of this change in the sales department of the local concern will be readily recognized by other competitors. The local company manufactures floor and mantle tile.

OBITUARY

F. G. Middlekauf, of St. Louis, Mo., the president and general manager of the Hydraulic Press Brick Company, which owns all the Hydraulic companies from Baltimore and Washington to Kansas and Nebraska, is dead, and was buried June 1st.

Daniel F. Gohn, of Columbia, Pa., is dead. He was 70 years of age and served in the Civil War in the Pennsylvania Reserves, and was for 36 years the treasurer of the Shawnee Fire Co.

Charles Allen, superintendent of Brigham's Brick Works at Lestershire, N. Y., died at his home in Stella at the age of 68 years.

FIRE! FIRE!! FIRE!!!

The plant of the Forest City Brick Co., near the foot of W. 50th St., Cleveland, Ohio, was damaged by fire to the extent of $10,000.

The plant of the Binder Bros. Brick Works at Emaus, Pa., was damaged by fire to the extent of $1,000, caused by the roof of one of the kilns catching fire.

ROOFING MATERIALS EMPLOYED IN ORIENT

Some interesting information in regard to roofing materials in the Orient and the far east has been furnished by Thomas R. Wallace, consul at Jerusalem. Writing of roofing materials in Turkey he says:

The old buildings are constructed entirely of stone, the walls being from 3 to 4 feet thick, and are arched over with heavy stone ceilings. The roof is covered with stone flagging neatly fitted and cemented in the joints. The more modern buildings are constructed in a very similar manner to the above, but most of these are finished with tile roofs. The tiles are laid on a steep wooden framework. The buildings put up in this country are designed to stand several hundred years. These tile roofs are practically indestructible, the wood being the only part needing renewal. Those erected 20 years ago are still in good preservation, including the woodwork.

The tiles used here are made of a fine red pottery clay and are imported from Marseilles, France. They retail here at $4 per hundred. Each 13 of these tiles covers one square mile, so that 100 tiles will cover 7 9-13 square miles of surface, and no boards on which to lay them are necessary, such as are required with tarred roofing. This is quite an item to be considered, as lumber in this country is very expensive.

A roofing to meet the demands here must be long lived, must stand a hot sun for seven months of the year and must be of a material that will not injure the taste of the rain water.

IOWA BRICK MANUFACTURER LOST

Henry Frerichs, who for many years has been a prominent business man in Grundy Center, Iowa, left home three weeks ago and he has not been heard from since. He left on a supposed business trip to Windom, Minn., where he said he was going to trade his interest in the Grundy Center Brick & Tile plant for a farm. Before he left he received two drafts for $5,000 each on the Grundy Center bank. The drafts were paid at a bank in Windom and cash was paid for them.

ACCIDENTS, DAMAGES AND LOSSES

Works, Edwardsville, Ill.

T. H. Mitchell had his leg fractured at the Banner Brick

Jacob Rady, of the Shelbina (Mo.) Brick & Tile Works, got his left arm broken at the brick works.

Arthur Hinson, of Chester, Pa., badly crushed his hand in the rolls at the Redley Park Brick Works.

The Blackwell (Okla.) Brick & Tile Co.'s plant was sold at receiver's sale June 8th, to satisfy a $33,025 claim.

Notice has been served on the Dempsey-Gabriels Brick Co., of Crescent, N. Y., for a receiver. The company will oppose it.

The Willets Mfg. Co., Trenton, N. J., has been placed in the hands of a receiver. It is one of the largest potteries in the country. Liabilities, $161,000.

Samuel Molnar, an employe of the Rose Brick Co., Roseton, N. Y., was knocked off the sand dock into the Hudson, a horse and cart falling in upon him.

A cave-in of a large embankment at the Buckeystown (Md.) Brick Works resulted in the death of William Grayson, and injured Claude Brown, both colored.

O. W. Buck is suing the Tyro (Kansas) Shale Brick Co. for $2,740 for compensation for two years, claiming 25 cents per thousand for every thousand brick made.

Frank L. Capers, Jr., son of F. L. Capers, president and general manager of the Standard Fire Brick Co., Pueblo, Colo., accidentally caught his glove in the brick press and crushed off his right hand at the wrist.

Patrick Mulhern, who owns property in Salineville, Ohio, near the Ohio City Products Co. plant, has sued the company for $2,000 damages by reason of smoke, soot and cinders from the kilns making his buildings untenantable.

CHARGES THAT MINE REFUSE INJURES PROPERTY

Attorney C. M. Bowman, in behalf of the Wyoming Brick Manufacturing Co., made application to Judge Halsey for an injunction to restrain the Temple Iron Co. and the Mt. Lookout Coal Co. of Exeter from running sulphur water, culm and refuse onto the property of the plaintiff at Wyoming, Pa.

The plaintiff in the petition sets forth that the coal company is pumping considerable water, which with culm finds its way on the clay deposits, property of the plaintiff, and is doing considerable damage to the property and threatens to destroy the brick making industry there.

When the application was presented attorney B. R. Jones, representing the Mt. Lookout Coal Co., stated that an injunction to restrain the coal company from pumping water would cause the mine to be flooded, entailing considerable damage to the company. That the company had been pumping water at that point for twenty-five years while the brick company was organized less than two years.

Judge Halsey refused to grant an injunction, but directed that the following order be made in the case:

"Now, May 10, 1909, on filing bill of complaint and prayers for injunction on motion of counsel for plaintiff, it is ordered and decreed by the court that the testimony of witnesses be taken in accordance with the equity rules in support of the motion for the injunction. That upon the presentation of the same court will then determine the question whether an injunction will be allowed."

PACIFIC COAST NEWS ITEMS

There have been but few contracts let for the erection of large brick buildings in San Francisco during the past month but work has been started on numerous small ones, so that the aggregate of building is keeping close up to the average for this season of the year. Last month contracts to the value of more than $3,330,000 were let, or about $400,000 more than the preceeding month. Now that there is no danger of more rainy weather, building is in full swing and the reports from the brick layer's union indicate that there are fewer idle members at the present time than for many months past. Indeed, considering the volume of the work now under way there are more brick layers at work than would usually be necessary. The reason for this is that the work is mostly on small structures of class "C" type where cement is used but little and where the building ordinances will not allow all wood buildings to be erected. Another important reason for the large use of brick here at the present time in proportion to the volume of work being done is that the price of cement is being kept at a high figure while brick on the other hand is still comparatively cheap in price and indications are that a reasonable figure will be maintained. Where formerly cement was used almost exclusively for laying foundations, owing to its cheapness for this purpose, brick is coming into use again and at least one firm in the business is catering to this particular branch of the trade and is making a brick that is exactly as thick as the common ones, allowing it to be laid rapidly.

The market at the present time is in a quiet condition and prices for common brick are about the same as they have been for several months, $9 being the general price asked, and but little shading of this price is being done by any of the firms in the business. Just how long this rate will be maintained is a matter of doubt, however, as conditions for the future do not look altogether promising to some in the trade. A number of the large firms operating around the Bay have placed their products into the hands of one selling agent and are limiting the output of their plants to what is considered likely will be used. Many other plants, however, are starting up and are turning out all the brick they can, profiting by the action of the large producers in restricting their output. The capacity of the plants in the vicinity of San Francisco is now so great that they can supply a great deal more common brick than can possibly be used here. Naturally these plants desire to operate even though it can be seen that for all to do so means a certain overproduction. In case the plants outside the selling combine attempt to cut prices it is anticipated that conditions similar to those prevalent last season will be in force again.

Several of the local plants are preparing to put lines of paving brick on the market and some of them have already secured some very encouraging returns from this branch of the business. Paving brick has been tried in San Francisco a number of times but without much success until recently. Asphaltum pavement has proved itself worthless for heavy traffic and some substitute must be found. The Vallejo Brick and Tile Company is the firm that is supplying the most of the paving brick sold at the present time and it is announced that the plant will be kept busy all summer on work of this kind. In addition to the large contracts for furnishing paving brick for use on some of the San Francisco piers a number of small contracts have been secured. At the present time there are eight kilns in operation but the capacity of the plant is to be doubled before the end of the season.. There is a fine bed of pottery clay on the grounds controlled by this concern but this has not been developed yet but may be later on.

The San Francisco Brick Company is now putting its new foundation brick on the market and is meeting with great success in marketing it. It is expected that other firms will follow the lead of this firm and that soon the new size will be in common use.

The installation of new machiney in the plant of the Western Brick Company at Richmond, Cal., at the head of San Pablo Bay, has been completed and after a shutdown of several weeks the plant has been started up again.

The Monterey Brick & Stone Co., of Monterey, Cal., has practically decided to remove its plant to Sacramento where shipping facilities are much better.

The California Pressed Brick Company of Newark, Cal., is very busy, and is now having a 150-foot brick chimney constructed at the plant. The plant when completed will have a capacity of 45,000 pressed brick a day. To supply the immediate demand a number of field kilns are in operation.

The Los Angeles Paving Brick Company of Los Angeles has increased its capital stock from $100,000 to $150,000 and with the new capital intends to make some substantial additions to its plant.

The plant of the Sandstone Brick & Lime Co., of Seattle was recently destroyed by fire May 4th and a loss of about $80,00 was incurred. Against this loss there is insurance to the value of about $20,000. It is announced that the plant will be rebuilt.

The Northwestern Brick & Tile Co. has been incorporated at Deary, Idaho with a capital stock of $15,000.

The Mountain Cement & Brick Co. has been incorporated at Salt Lake City and Thomas R. Cutler and one of the other stockholders has left for the East to purchase machinery as it is desired to have the plant in operation within the course of three months. The following are the officers of the company: President, J. C. Sharp; Vice-President, Thomas R. Cutler, Jr.; Secretary and Treasurer, J. P. Sharp. The brick plant that will be established will have a capacity of 20,000 bricks a day.

A small brick plant is to be established this summer on the Hoopa Indian Reservation, near Eureka, Cal., to supply material that will be needed for work on the reservation.

The Pima Brick & Tile Co. has recently been incorporated at Globe, Ariz. This concern is a consolidation of three local brick companies and it is announced that not only will brick be manufactured for the needs of the immediate district but that brick and tile would be made for shipment to outside points. The company controls clay beds of very fine quality.

NATIONAL BUILDERS SUPPLY COMPANY ORGANIZED

Announcements were made last month that the building material business conducted by Arthur M. Lutes, at Oklahoma City, Okla., was incorporated under the name of the National Builders' Supply Company, with Arthur M. Lutes as president and George C. Gray as secretary and treasurer. Mr. Gray hails from Chicago, and for many years was the secretary and treasurer of the Jenkins & Reynolds Co. He is a young "adonis" of splendid reputation and there is no doubt but what they will "make good" in the new location.

The writer has no acquaintance with Mr. Lutes, but one of our mutual friends says he is made of the right kind of goods and generally does the right thing at the right time.

The office of the company is at 309 Culbertson Building, Oklahoma City, Okla.

RAILROADS MUST CONNECT TRACKS

The Northern Iowa Brick and Tile Company at Mason City, which has been trying for months to force a connection of the Milwaukee and Great Western tracks has won its point. The railroad commissioners promulgated an order that the connection be made.

BIG BRICK PLANTS WILL LOCATE IN SOUTH COFFEYVILLE AT ONCE

Etchen Brothers have landed two of the largest brick plants west of the Mississippi for the new town. They are not imaginary brick plants, but real industries. The M., K. & T. and Missouri Pacific investigated them thoroughly, before they consented to put in switches and siding at the new town.

One plant is to have a daily capacity of one hundred thousand bricks a day. The other one hundred and twenty-five thousand, both greater than the largest plant in Coffeyville. The shale will be dug from the hill which bounds the new town on the west. Three cent gas had much to do with the locating of the industries.

Frank Brown, of Independence, Kansas, will put in the 100,000 capacity plant. He is interested in many other brick plants in the state. He has already bought his machinery.

Anderson & Anderson, of Caney, Kansas, and St. Louis, Mo., together with several other capitalists will build the 125,000 capacity plant. Their contract calls for work in thirty days. Both plants will have the latest type of brick making machinery.

South Coffeyville's future has depended entirely upon the location of a factory there. Without factories the new town just across the line from Coffeyville in Oklahoma would have withered and died, but with factories its future is assured. Now the new town has its first factories, and they will draw more. The people who invested early and moved to the new town are now repaid for their faith in the place while others scoffed.

The success of South Coffeyville, Okla., means much to Coffeyville, Kan. Its prosperity will not take any away from Coffeyville, but on the contrary will mean that much more for this city. With less than a mile from the city limits to the new city and a street car line between only the state line prevents the two from being one.

Etchen brothers have closed a deal with several big gas producers who have large holdings near South Coffeyville, whereby the new city can offer three cent gas on from three to five year contracts, the cheapest gas for factory purposes offered by any city or town in the United States. Under the contract the gas company is to lay a ten inch line from their fields to the city. The pipe line will be about eight miles long, that being the distance of the gas wells from the city.

MR. CAPERS MEETS WITH SAD ACCIDENT

Mr. Frank L. Capers, Jr., is 26 years of age and since he was graduated from Harvard has been working in the Standard Fire Brick Company's plant, at Pueblo, Colo., in order to thoroughly learn the business. For some time he has been working as a foreman.

Mr. Capers was engaged in cleaning a piece of machinery when the accident happened. His working glove was caught in a repress, and before he could extricate his hand, the press had closed with enormous pressure. Assistance was given at once.

The young man was placed in an automobile and started for the hospital. Before leaving he displayed his nerve by thanking those who had assisted him.

The surgeon who was summoned found that the hand had been crushed off and was hanging by two tendons. There was no possibility of saving the hand.

Young Mr. Capers is prominent socially and is very popular in business circles. He was earnestly engaged in learning the business with which his father has long been identified.

TRAVELING SALESMAN AT THE ILLINOIS

"The Traveling Salesman" at the Illinois Theater is enjoying the largest patronage of any attraction in the city of Chicago. No play produced in recent years has been so universally popular with all classes of theatergoers.

It has been described as "the play with 1,000 laughs." "The Traveling Salesman" is by James Forbes, the author of "The Chorus Lady." As in his former play, the author has in this "held the mirror up to nature," and natural types he has reflected upon the stage. He has picked out a quartet of traveling salesmen and the natives of a one-horse railroad town in the interior of Indiana. He has woven around two of these widely diversified characters an appealing love story, not too sentimental, but sufficient to make the audience love both sweethearts.

And then the author has come to the fore with an assortment of comedy lines that fairly sparkle and snap as they come across the footlights.

The plot, briefly, has to do with the love at first sight of a traveling salesman for a girlish telegraph operator at Grand Crossing. The girl has some property that two schemers plan to get away from her by bidding for it when it is put up for sale for taxes. The traveling salesman learns of the plot, foils it, and finally wins out, after undergoing all conditions of misery because the girl does not believe he means well by her.

If your servant leaves you on a moment's notice, if your pet stock falls off ten points, or your dog is sacrificed for not having a muzzle, don't feel blue, just go to see "The Traveling Salesman."

The play is being presented with the original New York company, which comprises Frank J. McIntyre, Elsie Ferguson, William Beach, Sarah McVicker, Arthur Shaw, Percival T. Moore, Edward Ellis, Nicholas Burnham, H. D. Blakemore, R. C. Turner, Richard Ogden and Maude B. Sinclair.

Performances nightly, Sunday included, matinees Wednesday and Saturday. Fifty cents to $1.50, no higher, and mail or telegraph orders always receive special attention at The Illinois.

PROFESSOR HAWORTH WANTS STUDY OF CLAY INDUSTRY

Ever since Prof. Erasmus Haworth came to the Kansas university in 1892, he has been working for the establishment of a course of study in ceramics which pertains to all kinds of clays and the products made from them. The department of fine arts, of civil engineering and of geology will take active interest in the work. As soon as a kiln can be provided work will begin. The details of this new branch will be given out later.

The clay industry is becoming more important each year; the United States and State Geological Surveys devote much attention to it and the product of the industry reaches into the millions in many states.

An interesting fact in connection with clay work is that over two hundred years ago clay was sent to England which practically formed the basis for the fine earthenware and pottery of that country.

ANOTHER NEW BRICK FACTORY FOR FERRIS

A new brick company has machinery installed and will be in operation at Ferris, Texas, soon. This makes five brick yards for Ferris, representing an investment of $300,000, employing 200 men with a weekly payroll of $2,000. They burn from 7,000 to 10,000 barrels of oil and 1,000 to 1,500 cords of wood a month. They make an average of 5,000,000 brick a month and ship in cars of 15,000 capacity. The foundation of this industry is due to the peculiar shale which makes a long life brick of light weight.

LOS ANGELES SHIPPING BRICK TO PORTLAND AND SEATTLE

Los Angeles, Cal., is sending brick away by the millions. Up at Seattle, Wash., they are making 30,000,000 street-paving bricks a year, and yet they are unable to keep pace with the demand in the great Northwest. Of course, Seattle is not the only place where this industry flourishes in the North, but all the plants in that part of the country are unable to meet the demand.

The consequence is, the Los Angeles Pressed Brick Company is now busy shipping 1,500,000 paving brick to be used in the city of Portland, Ore. They have to be crated and the buyers furnish the crates and do the crating. This process costs $7 a thousand and with the freight added the Portland people must be paying about $14 or $15 a thousand more for their brick than they cost in Los Angeles. They are shipped from the plant to the long wharf at Santa Monica and there transferred to ship. This is the reason for crating them. They have to be swung by a crane from the wharf and let down into the hold of the ship, which would not wait long enough to have an immense lot of the brick lifted by hand.

The same company is shipping street-paving brick to San Francisco because they are needed there in a hurry and the local plants cannot furnish them. Further orders are expected from San Franscisco, which will probably run the amount up into hundreds of thousands.

Then follows Tacoma, Wash., with an inquiry for 100,000 brick to be shipped at once, and negotiations to furnish 500,000 a month during the whole of the year. Inability to meet this demand on the part of the local brick makers loses the business to that city.

They are making good streets up in these northwestern cities and seem to be willing to pay the price. The clays in and about Los Angeles are admirably suited for the making of street-paving brick. The industry is one of the most promising in this part of the country.

DES MOINES PLANTS CAN NOW SUPPLY THE DEMAND FOR BRICK

Des Moines has just recovered from the greatest brick shortage experienced in recent years. Up to a week and a half ago, more than 2,000,000 brick had been shipped into the city within a month because the local plants were unable to supply the demand.

Building progress was interfered with and laborers were laid off when the supply in the Des Moines plants was exhausted. For a time it appeared that the supply would be short throughout the summer, but contractors say that the local plans will soon be able to supply the demand.

The fact that all of the larger brick plants are undergoing extensive repairs and being enlarged is largely responsible for the shortage of brick. One of the largest concerns recently shipped more than 1,000,000 brick into the southern part of the state. The shipment included all of the brick held in the yards and this played a large part in shrinking the local supply.

"Nearly every brickyard in Des Moines is being enlarged," said Edward Marxer, of the Benson & Marxer Company. "When the improvements are completed the capacity of the local plants will be greatly increased. Each plant made its repairs and enlargements at the same time and of course the output was diminished."

"One local company used more than 500,000 brick in the construction of continuous kilns," said J. E. Tusant. "This together with a mammoth out of town order and the repairs of all the plants, caused the local contractors to suffer from the shortage. All the plants in Des Moines started burning brick unusually late this spring."

TERRA COTTA'S FUTURE AS LOOKED UPON AT ELIZABETH

Terra cotta construction has a future in Elizabeth, N. J., according to some of the local architects, which, if the increase of construction work is sufficient, will replace the frame method of building altogether.

In talking about terra cotta construction to one of the architects, a reporter was given many reasons why this form of building has advantages over the old frame structures. Terra cotta, the architect said, is being used in Montclair, through the Oranges and along the Jersey shore in the building of cottages and residences, and is proving not only successful, but is becoming popular.

Buildings constructed by this method have re-enforced concrete foundations with the same material for floors. The terra cotta blocks are plastered in the interior, making lathing unnecessary. The cement exterior gives the stucco effect. Buildings of this design are of the old Spanish mission style of architecture, and very beautiful and lasting.

The cost is about twenty per cent more than that of frame construction, but in the long run is cheaper. The cost of maintenance is reduced to a minimum. The building is absolutely fireproof, no paint on the outside is necessary and the insurance companies class buildings of this kind with brick, thus reducing the cost of fire insurance.

NASHVILLE PRODUCES LOWEST PRICED BRICK IN SOUTH

For many years Nashville, Tenn., has advanced steadily in the making of brick and now leads all Southern cities as a brick producer.

In the city are located several of the most up-to-date plants, which not only supply the Nashville demand, but ship largely to Kentucky, Oklahoma, Georgia, Arkansas and Florida. Nashville is the lowest priced market for brick in the Middle and Southern states, and this business is estimated at more than $1,000,000 annually, while 1,000 laborers are given steady employment. The largest brick factories in Nashville are the Fulcher Brick Company, W. G. Bush & Co., W. D. & C. H. LeSueur and E. T. Lewis & Co. The Bush Brick Company has two brick yards, one in Northeast Nashville and the other on the Cumberland River below the lower island. W. D. & C. H. LeSueur and the Fulcher Brick Company have yards in South Nashville, and the yards of E. T. Lewis & Co. are in East Nashville.

In addition to manufacturing brick, several concerns handle what is known as side lines, and while formerly these side lines were of little importance, they have increased so much of late that they are now no small item. For example, E. T. Lewis & Co. handle sand in large quantities, and also all kinds of building material. The Foster-Herbert Cut Stone Company and the Foster-Creighton Company furnish material for foundations and trimmings. The most improved machinery is needed in this business, like all others, and, instead of the old-time horse and clay pit, the modern brick yard is equipped with steam shovel and brick-making machinery.

A THREE MILLION GASSER

The drillers brought in a fine gas well for the Parsons Vitrified Brick Co., on the Chas. Gay place, two and a half miles north of Mound Valley, Kansas. It is pronounced to be one of the best wells in this field, with a flow of 3,000,000 cubic feet of gas a day. The brick company, as well as all the people, are elated over the bringing in of this well. It insures plenty of gas for the plant, and there will be no need to shut down for want of fuel or power. The company will continue to drill more wells as they have plenty of leased land on which to drill.

HAVERSTRAW MANUFACTURERS RUSHING TO CATCH UP WITH ENORMOUS DEMAND

In Haverstraw everything is booming, and in building trade circles this fact is accepted as evidence of the return of prosperous times. For there is no other business which indicates the signs of prosperity or depression quicker than brick manufacturing, which right now herald an era of good times for all the great brick manufacturing towns along the Hudson River.

Eleven brick yards so far have been opened this season which were idle this time last year owing to hard times and the poor demand for brick. These are the plants of Dunnigan & Burns, and Morrison & Shankey, at Haverstraw; Reilly & Marks, at Stony Point; O'Brien & Lynch, Murray & Gaghan, and Gormley, at Crugers, Westchester county; Burns & Carrol, McGrath & McCabe, and Joseph Belisle, at Fishkill, Dutchess county, and Malley & Brothers, and Goldsmith & Gardner, at East Kingston, Ulster county.

There is a great shortage of brick this year, as all the kiln beds where the burned or hard brick are stored were almost empty this spring. It will take at least three months of steady work without shipping any brick, to fill the sheds. The total amount of brick along the Hudson River from New York to Albany on May 6 was 75,000,000 hard or burned brick, 75,000,000 green or unburned brick, or about 60,000,000 less than usual at this time in other years.

New York state is the largest producer of common brick in the United States, and about 75 per cent of the total comes from the Hudson River district and Rockland county. All other brick centers pale before the immensity of the annual output of Haverstraw, 350,000,000 brick. The clay banks of Haverstraw, it is estimated, will last for at least another century.

SILICA BRICK PLANT FOR PENNSYLVANIA

Hollidaysburg, Pa., is destined to have a modern silica brick manufacturing plant in the near future. Mr. J. A. Mattern of Gaysport has optioned to a party of capitalists from Pittsburg and Chicago, a plot of twenty-five acres of ground, lying west of the Pennsylvania railroad, in Blair township, near the yard of the Thermic Coal & Coke Compay, at McCahan's Bluff. A $250,000 steel structure of the latest modern appliances will be erected on this land, devoted to the purposes of a modern silica plant, modeled after the Mount Union brick works, and will give employment to a force of about 200 men. The works will probably be built this summer. Silica brick is used in coke plants, open hearth furnaces, and in some departments of the Pennsylvania railroad company at Altoona. Ganister stone is an important factor in its composition, and its close contiguity to the ganister quarries of J. L. Hartman is the prevailing inducement with the capitalists to locate there. The building of this industry will be a source of much gratification to the people of that vicinity.

OWNS A BRICK OVER EIGHT HUNDRED AND FIFTY YEARS OLD

Gust Haut, a brick manufacturer of Perham, Minn., cherishes a souvenir of his visit to his native village of Saal, Germany, six years ago, in the shape of a brick from the ancient church there, which was constructed in A. D. 1240. When he was there, some repairs were being made which involved taking down a portion of one corner. Mr. Haut took advantage of the opportunity to secure one of the brick.

SAND OR LIME BRICK OR BLOCK NEWS

The Federal Cement Tile Co. has secured a site at Hammond, Ind. The company will employ 150 men.

The Denbigh (No. Dak.) Brick Co. is running its sand-lime brick plant night and day, making 35,000 brick daily.

Stoecker Bros. have completed their new cement tile plant at Stanwood, Iowa. They will make brick, drain tile and building blocks.

Whitney Bros. are constructing a cement brick and block factory on Hammond Ave., Duluth, Minn. Colby M. Avery, of Aurora, Ill., drew the plans.

Andrew Pick, Jr., has sold the West Bent (Wis.) Sand-lime Brick Works to M. H. Evans, of St. Paul, Minn., who has already taken charge of the plant.

The Grande Brick Co., Grand Rapids, Mich., has begun the manufacture of their sandstone brick. J. L. Jackson, of Saginaw, is at the head of the company.

The Montana Granite Brick Co., Helena, Mont., has resumed operations after a shut-down of all winter. The company now has orders for 2,000,000 brick.

The J. E. Bartlett Co., of Jackson, Mich., has been awarded the contract to furnish 250,000 face sandlime brick for the Newcomb-Endicott department store building at Detroit, Mich.

The White Silica Sand & Cement Brick Co., of Erie, Pa., has been organized at Dover, Del., with $500,000 capital stock. The incorporators are Adam Karch, Frank L. Leary, and John W. Schester, all of Erie.

The Conniff Bros. Cement Tile Mfg. Co., Iowa Falls, Iowa, has purchased a tract of land and will build a cement brick and tile factory at once. One member of the firm comes from Waterloo and the other from Brandon, Iowa.

The Raton Cement Block & Brick Co., Raton, N. Mex., will add to the products and equipment the making of the Cincinnati Cinder Brick. Fred Meyer is in charge. The cinder brick are made of one-third cinders ground fine, and two-thirds of clay or shale.

James T. Pigg, of Kansas City (Mo.) Pressed Brick Mfg. Co., is considering the starting of a similar plant at Jefferson City, Mo. They expect to use the red sand rock found on the farm of Dr. W. D. Morris. It assays 87½ per cent of silica. Mr. Pigg and four brothers are now operating a 30,000 capacity plant at Barnett, Kansas.

The plant of the Flint (Mich.) Sandstone Brick Co. has been taken over by a new corporation by the same name. The new officers are W. E. Wood, president; W. H. Little, vice-president; C. S. Mott, secretary and treasurer; Jack Hammond, salesmanager, and H. Dalton, manager of the plant. All are residents of Flint. Steps will be taken at once to double the capacity of the plant, which is now 220,000 brick daily.

POTTERY NEWS ITEMS

Charles M. Miller, Athens, Texas, contemplates establishing a pottery at Shreveport, La.

The plant of the El Reno (Okla.) Pottery Co., has been sold to the One Minute Washing Machine Co., and it will be converted into a factory for them.

The Willets Manufacturing Co., a Trenton, N. J. pottery concern, is in the hands of a receiver. Delays in the enactment of tariff legislation is said to be a contributing cause of the failure.

J. H. Bauer, of Kentucky, has purchased land at E 33rd and Lacy Sts., Los Angeles, Cal., and machinery is now being shipped for a pottery that will employ 50 hands. They will make jars, jugs, jardiniers and earthenware garden ornaments.

MISCELLANEOUS ITEMS

The Los Angeles (Cal.) Paving Brick Co. has increased its capital stock from $100,000 to $150,000.

Gold Bros. Brick Co., Big Stone, S. Dak., have installed a new brick machine so as to double the previous capacity.

The Piedmont (W. Va.) Brick & Coal Co., is making arrangements to resume work at their plant in the near future.

D. Winegarden has now purchased all the stock of the Keswick (Iowa) Brick & Tile factory, so he is the sole owner.

Shoof & Johnson of Gadsden, Ala., have installed a plant for making brick at Boaz, Ala., and have orders for many thousand brick.

A new brick company has been formed in Chester, Pa., under the name of Cope, Carr & McClaskey Brick Co., capital stock $30,000.

The Norton Brick Co., York, Maine, has resumed work and are now making 50,000 brick daily, and the demand for the product is steadily increasing.

The Valleyford (Wash.) Brick & Tile Co. has leased the Rinier House of the Railway Co., to be used by their employees and the plant has had its initial tryout.

F. W. Kies, of Washington, has bought H. C. Ady's interest in the Grundy Center (Iowa) Brick & Tile Co., and is now taking an interest in the company's affairs.

The machinery has been started at the Mecusker Brick plant at Sedalia, Mo., for the first time. Brick will now be made to build permanent kilns and for the market.

The Mayo Brick & Tile Co., Walhalla, N. Dak., will be put into operation at once. A new foreman from Indiana will have charge of the plant and the outlook is excellent.

The Excelsior Brick Co. has been organized with $10,000 capital stock, at Montgomery, Ala. F. O. Rhodes is president, W. M. Blakey, secretary, and John Klinge, treasurer.

Braun Bros., who recently purchased the Barrow's Brick Works at Cassville, Wis., are busy installing new machinery and getting the yard in shape for business on a larger scale.

The Burlington (Iowa) Brick Co. has purchased 40 acres of land adjoining their plant at Viola, Ill., and expect to erect several houses and a boarding house for the employees.

At the annual meeting of the Washington Brick, Lime & Mfg. Co., Spokane, Wash., the stockholders elected J. H. Spear president and Lawrence A. Spear secretary and treasurer.

The Rich Hill (Mo.) Brick & Tile Factory is being put into repair caused by the damage by wind in a recent storm. The works will be in better shape then ever to care for the trade.

The Hunt-Queisser-Bliss Co., Cleveland, Ohio, has been organized with $100,000 capital stock. Incorporators are Wm. H. Hunt, R. L. Queisser, C. A. Bliss, Geo. A. Coulton and John MacGregor, Jr.

The tile plant of J. J. Keyes & Son, Rantoul, Ill., is to be taken down and sold and the firm has made arrangements with a large tile works for tile for their trade and for brick from another large concern.

Contractor Shelde of Litchville, Minn., has decided to send for machinery for making brick and tile on the James river north of Jamestown, N. Dak. If the shale is as expected a large plant will be constructed.

At the annual meeting of the Ostrander (N. J.) Fire Brick Co., the following directors were re-elected: F. A. Ostrander, J. K. P. Pine, F. M. Mann, Jr., H. W. Gardinier, J. W. F. Podmore, R. Rynders, and Charles Ferry.

The Shoshoni (Wyo.) Brick Co. was recently incorporated and have purchased a complete outfit of Eagle Machinery, 30,000 daily capacity. The officers are Newt. Ferguson, president; C. W. Neff, vice-president; A. S. Heyer, secretary, and H. J. Shaad, treasurer.

John Sehy, Ashland, Ill., has added a tile factory to his brick yard and will be prepared to furnish tile soon.

C. E. Travis and W. F. Johnson, of Livermore, Iowa, will operate the Sioux Rapids (Iowa) Brick & Tile works this season.

W. O. Stratford, who recently purchased a brick plant near Raleigh, N. C., has sold his interests there and returned to Greensboro.

The Central Brick Mfg. Co., Chicago, Ill., has changed its name to the Central Brick Co., and reduced the directors from five to three.

The Egg Harbor Brick Works at Egg Harbor City, N. J., has been bought by D. B. Ingersoll, the well known brick dealer, who will make extensive improvements to the plant.

James Lincoln, of Berlin, Ct., has bought of John D. Johnson his brick business at Newfield, Middletown, Ct., and already has taken charge of the plant. Mr. Johnson will retire.

Capital has been subscribed for a brick and tile company at Cheyenne, Wyo., to be built as soon as a good capable man can be had to take charge and secure the proper machinery.

Charles E. Sockler, owner of the Kingfisher (Okla.) Brick Works, is contemplating the installing of tile machinery in the plant. There is a heavy demand for brick this year.

Under amended articles of incorporation the capital stock of the Latonia (Ky.) Brick Co. was increased from $25,000 to $50,000. The directors are B. D. Benz, J. T. Cannon, J. Herrick, W. H. Ritte, H. C. Carlton and J. T. Earle.

On page 36 of this issue is the advertisement of A. P. Dyke, Hope, Ark., who is a well known land broker and factory locator. He has an exceptionally good offer for a brick and tile manufacturer. Read what he says and write to him.

DIRECT HEAT

DRYERS

FOR

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue W. C.

American Process Co.,
68 William St. NEW YORK CITY

M. E. Morey will establish a brick plant at Smithville, Texas.

The five brick plants of Cherryvale, Kansas, make 500,000 brick daily.

C. M. Howells is interested in the establishing of a brick plant at Womble, Ark.

Hill & Anderson, Millen, Ga., are interested in a proposed brick plant for that place.

The plant of the Neshannock Brick & Tile Co., Volant, Pa., has started operations for the season.

F. A. White, of Versailles, Mo., is figuring on the building of a large fire brick plant at Mexico, Mo.

The Crush (Texas) Brick & Tile Co. will increase the capacity of their plant and erect additional kilns.

The Lawrence (Kansas) Brick Works are making 40,000 brick daily and is not able to keep up with its orders.

T. F. Hook and others of Webster City, Iowa, will establish a drain tile and sewer pipe plant at Dallas, Texas.

James Blake, of Bonham, has been awarded a contract to build a 10,000 daily capacity brick plant at Paducah, Texas.

The Prewitt Brick Mfg. Co., Elgin, Texas, will expend $25,000 for a brick plant that will make 40,000 brick daily.

The Federal Clay Products Co., Mineral City, Ohio, has reduced the capital stock of the company from $300,000 to $30,000.

Frank Brown, of Independence, Kansas, will establish a brick plant at South Coffeyville, Okla., with 100,000 brick daily capacity.

D. O. Walsworth has leased the Greenfield (Iowa) Brick & Tile Works for the season from E. H. Bickford and is now operating it.

Anderson & Anderson, of Caney, Kansas, and St. Louis, Mo., will build a plant at South Coffeyville, Okla., to make 125,000 brick daily.

The Auburn (Pa.) Shale Brick Co. has a score of men making all kinds of improvements, new buildings and new machinery being added.

Col. E. H. Morrison, of Fairfield, Wash., is trying to revive the brick works at that place, stating that the clay is excellent and demand good.

The Manteno (Ill.) Brick Co. recently made a record run, making 203,000 brick in eight hours on one machine. Their aim is to average 200,000 brick daily.

The Cunningham Brick Co., Greensboro, N. C., has been incorporated with $25,000 capital stock, by J. H. Cunningham, W. H. Osborne and C. D. Cunningham.

The Ferris Paving Brick Co. has added another machine to its plant so that they can now make 84,000 brick each day. The company is only making high grade building brick.

The test kiln put up at Alvin, Texas, under the management of C. C. May, has proved beyond question that a first-class facing brick can be made and the plant will be run at its fullest capacity.

The Birmingham (Mich.) Brick & Tile Co. works is to be started. The plant has been idle for some time. Whitehead & Mitchell will at once start it, Geo. H. Mitchell being the general superintendent.

The Abeline (Texas) Press Brick Co. has orders on hand for 900,000 brick, with a daily capacity of 20,000 brick. The present capacity of the plant will be doubled as soon as additional machinery can be placed.

The Ballantyne Fire Clay Co., Pittsburg, Pa., has been incorporated at Dover, Del., with $50,000 capital stock by Carl C. Conkle and N. W. Ballentyne, of Pittsburg, and Martin E. Smith, of Wilmington, Del.

The Stegmeyer Brick Co., composed largely of Middletown, Ct., capitalists, is to be reorganized. The plant is located in New Jersey. The reorganized company will satisfy all claims and enlarge and operate the plant.

The Ladysmith (Wis.) Brick & Tile Co. has reorganized and resumed operations at their yards.

T. B. English has taken an option on clay land at Lamont, Wash., and will put in a brick plant at once.

The Ada (Ohio) Clay Co. has just contracted to install a new 100 h. p. engine and boiler in its plant.

The Larue (Ohio) Clay Co. has been incorporated with $25,000 capital stock by W. W. Stevenson and others.

L. J. Haskins, of Sargeant Bluff, Iowa, is adding two new kilns to his plant and otherwise increasing the capacity.

The O'Donnell-Busch Pressed Brick Co., Poplar, Mo., has produced its first pressed brick and the quality is perfect.

Branhall Bros. Brick plant, recently located at Durant, Okla., commenced active operations. The local clay is found to be very fine.

At Bay City, Texas, a local firm has just completed the burning of a kiln of brick and the experiment has been pronounced a success.

The United States Roofing Tile Co., Parkersburg, W. Va., is to be reorganized and the plant will be operated on a more extensive scale.

The Mound Valley (Kansas) Brick plant was sold to H. W. Reber, of Parsons, and the president of the Parsons Brick Co., which owns the other plant at Mound Valley.

The Cambridge (Md.) Brick Co. recently elected the following officers: John A. Lewis president, A. Phillips vice-president, and W. S. Hoddinott secretary and treasurer.

The Piketon (Ohio) Brick Co. has been organized with $125,000 capital stock. The directors are C. K. Patterson, T. N. Patterson, L. Doll, John W. Barger and T. S. Rittenourt.

The fire brick plant of the United States Coal & Coke Co., at Orem, W. Va., started up the 10th inst. the first time for two years. E. W. Bartlett, formerly of Covington, Va., is the superintendent of the plant.

The Leavenworth (Kansas) Brick plant has been sold to O. A. Simmons and A. H. Barry, of Atchison, who will reorganize and operate the plant soon. The plant has been idle six years. Frank Walters, of Atchison, will be the manager.

The Ohio Valley Clay Co.'s works at Steubenville, Ohio, is to be enlarged and improved. J. W. Gill, the president, says it is absolutely necessary that the company increase the floor space. An electrical power plant by which the entire works will be operated, is to be built.

The
Coming Brick

At last it has been solved. Bricks can now be manufactured from furnace slag, much cheaper than clay, sand-lime or any other brick, both common or the finest face or press bricks. Crushing and transverse tests unquestionable.

Its cheapness of manufacture and its durability makes it the coming brick.

For particulars, address R. C. GANGEWERE, Patentee, Selma, Ala.

Will superintend erection of complete plants

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.

Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg. St. Louis, Mo.

Brick Plant for Sale or Lease

A conveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address

MRS. AGNES L. TURNER,
Fergnson's Wharf James River, Va.

FOR SALE

Profitable brick plant and business; 20,000 capacity. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago, Ill.

FOR SALE

One No. 20 Cyclone Disintegrator, made by the C. W. Raymond Co., Has been used about two weeks. Practically new. Address

COLUMBIA BRICK & PLASTER CO.
North East. Md.

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.

Address Brick Supt..
P. O. Box 81, Coffeyville, Kans.

WANTED

A first-class Engineer who can handle a corliss engine and look after machinery in brick plant. Must be a man of ability, later full charge of plant will be given to him if satisfactor. Will pay $900 a year to start.

Address "B E" Care of Clay Record, Chicago.

FOR SALE

One 140 inch American Blower ¾ Housing Fan One 25 H. P Weeber Gas and Gasoline Engine for driving above fan. Both machines only one year old. Address "KANSAS" Care Clay Record,

Chicago, Ill.

FOR SALE

A good stiff, mud brick plant near Syracuse, N. Y. Clay burns a nice red, suitable for face or common brick. Good market. Ship by water or rail. A bargain. Address

1702 MIDLAND AVE.
Syracuse N. Y.

WANTED

One second-hand medium size steam shovel for handling clay or sand.

Address E. J. KELLER,
Lexington, Okla.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

One hardening cylinder, 72 ft. long 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO
Norristown, Pa.

For Sale at a Bargain

Soft mud brick plant, one Hercules brick machine made by Horton Mfg. Co., one crusher, one sander, one clay elevator, one boiler, one engine, pulleys, belting, shafting, etc.; 11000 pallets, 10x36 inches; Racks for 80,000 brick; kiln doors, grate bars, barrows, trucks. Everything necessary for brick yard. Capacity 20,000 brick daily. Only two million brick have been made on this machinery which was bought new. Address, J. S. COLLINS,

Frankfort, Ky.

FOR SALE CHEAP

Chambers Augers Brick Mackine; Chambers Automatic cutter and table and wet clay pan made by Chambers Bros.. Philadelphia, Pa.

Length of brick machine and tables 51 feet as follows: Gearing with fly wheels, 81 ft., long machine 7 ft., long 22 tables with 2 belts and automatic head brick cutter in the center 36 ft. long making full length 51 ft. long. Will make twenty-five to thirty-thousand bricks per day.

WET CLAY PAN.

Two crushing weels 12 ft. 8 in., each around 10 in., thick or wide table that wheels run around 23 ft., around outside of wheels lenght of iron frame east to west at the bottom 12 ft. wide north to south 7 ft. 6 in., 13 ft. 8 in. high from bottom of iron frame work to top fly wheel.

TRUCKS

70 Trucks, 2 ft. Gage all iron for hot air Dyer.

SAMUEL GERSON & CO.
Coatesville, Pa.

BRICK YARD FOR SALE

Containing 14½ acres of best grade clay and sand for brick making purposes; equipped with all brick making machinery. Capacity 30,000 brick per day. Now being operated by owner who will sell on account of other business requiring his attention; river front location; boat freight rates; contract for 500.000 brick go s with property, original cost of property $11,000. Will sell for half. Reasonable terms. Investigate quick.

Address Box 343. Kaukauna, Wis.

FOR SALE

One seven foot Wet Pan, with engine attached, in good condition, A bargain. Address

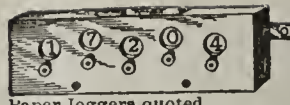
H. B. WEAVER,
905 Hamilton St.. Allentown, Pa.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 18 H. P. Heine Boiler
Two Freight Elevators

The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,

Nebraska City, Neb.



No better made, cut from $8 and $10, to
4 Wheel, $3 00
5 Wheel, $3.25
Guaranteed.
Paper Joggers quoted. Sold by all dealers
R. A. HART. 41 White St., BATTLE CREEK, MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machine; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments

W. L. JONES,
Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick. Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

Establish a Pressed Brick & Tile Plant

IN HOPE, Arkansas, where we have four railroads in daily operation, fifth line building and sixth lately surveyed.

Hope is 93 feet higher than the city of Little Rock; **is highest point on St. Louis main line of the I. M. & S. Ry., in Arkansas,** has a population of 5,302 and is steadily growing. **We have the best of water, mild climate and healthy location.**

A plant making pressed brick and tiling is very much needed here, as now all our first-class building brick and all tiling are shipped here at $16 to $30 per thousand for pressed brick and **five cents per foot for the cheapest 4-inch farm drain tile.**

Large territory to be equipped from here. One mud brick plant here, but **no other clay plant of any nature.**

Excellent shale for this business just outside of corporation on prominent railroad. This 40 acres of shale land can be had at the low price of $10 per acre. 160 acres of hardwood timbered land adjoining, insuring cheap fuel at only $30 per acre it taken at once. It is good farm land after timber is cut. This land is so close to town that it is **worth the price without consideration of the shale value.** I am drilling (870 feet now) for gas and oil, near Hope. Largest gas field in the United States is only about 60 miles from Hope—wild burning wells. Come and see; also take chances in my developement, but act at once. as I am drilling every day. Mine run coal costs delivered here $3.15 per ton.

Good practical brick makers have already made pressed brick from this shale and would, if you wish, invest a few thousand dollars in the plant.

Come and go over the proposition when I feel confident that you will be more than pleased with the outlook, and will, no donbt, wonder why such a plant has not long since been located here.

I have samples of brick to show test of shale, and you are invited to personally examine and test it yourself. Address A P. DYKE,

Factory Locations and Land Brokers, Hope, Arkansas

BRICK PLANT FOR SALE

One of the most complete stiff mud brick plants in Pennsylvania, located on the Pennsylvania Railroad near Philadelphia. Daily capacity, 30.000. Chambers Machine, nine tunnel hot air dryer, eight round down draft kilns, one Dutch kiln, railroad siding to kilns. All equipped with the most up-to-date appliances Can manufacture bricks at the lowest possible cost. Will sell at a sacrifice, and on easy terms. Good reasons for selling. A rare opportunity. Address S. C., care Clay Record, Chicago

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also full assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY
1413-G Street, N. W.
ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

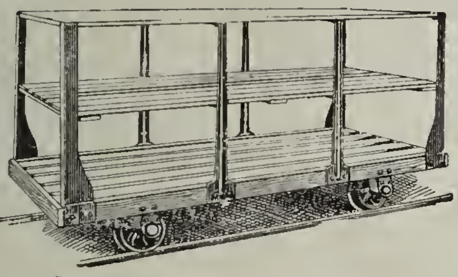
Yours very truly,
(Copy) ELLIOTT S. MORSE.

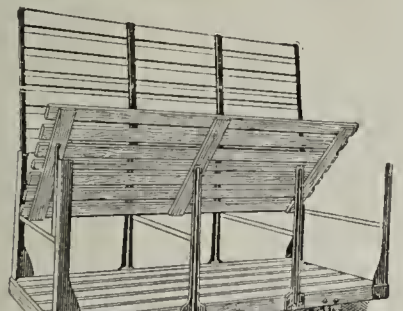
That which we have done for the above Company we can do for You We can remodel any Radiated heat dryer and increase its capacity from 15 to 30 per cent.

THE KING ENGINEERING COMPANY
RICHMOND, VA.

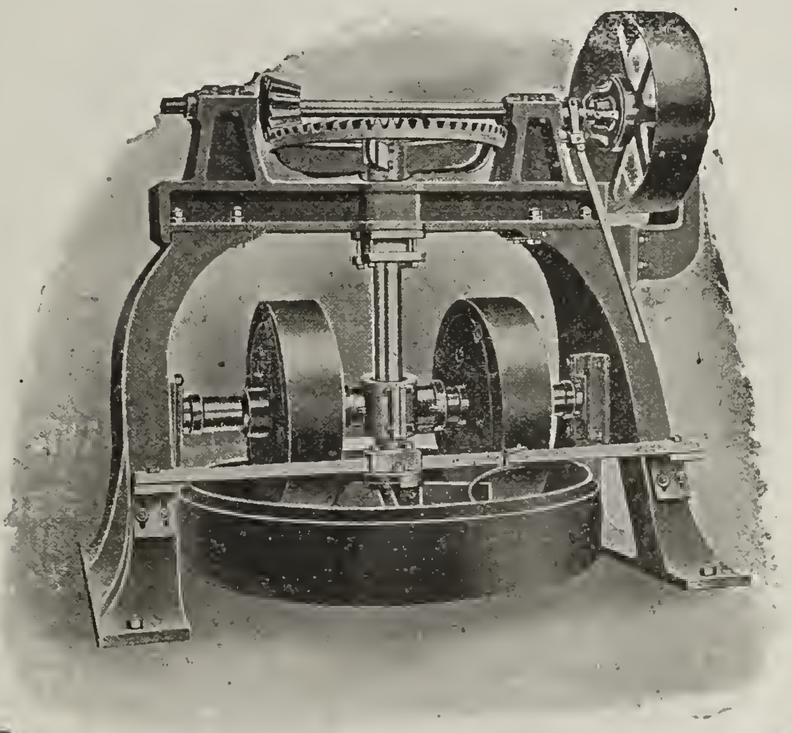
The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA



PHILLIPS & McLAREN CO. PITTSBURG, PA.
BUILDERS OF
Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.
ROCK AND ORE CRUSHERS

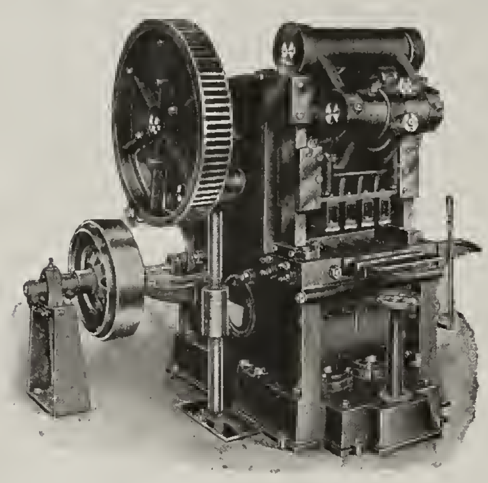
When writing for prices state kind of material and capacity required.

Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

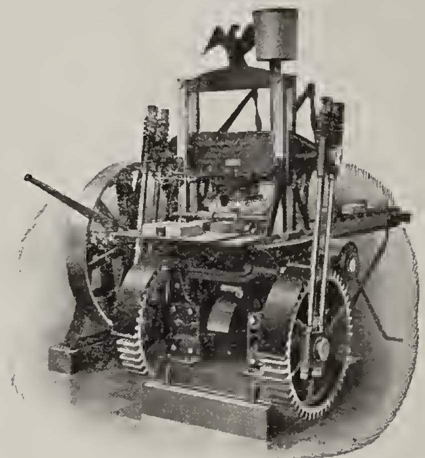
THE AMERICAN CLAY MACHINERY COMPANY

BUILT RIGHT RUN RIGHT

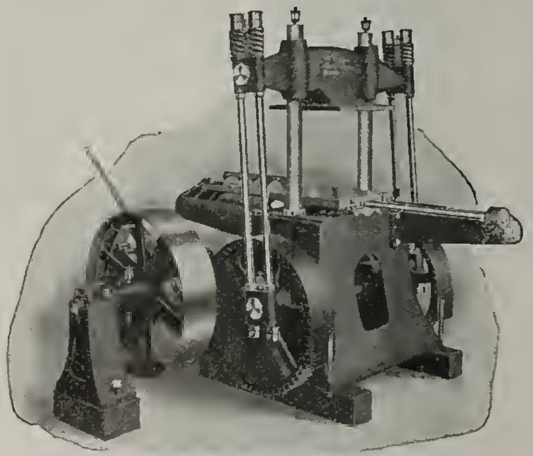
BUCYRUS OHIO, U.S.A.



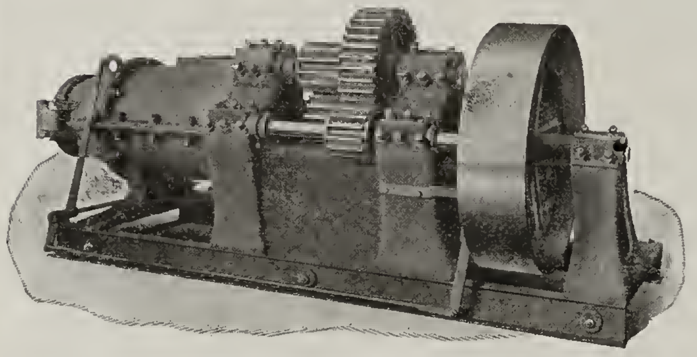
Model "B" Dry Press



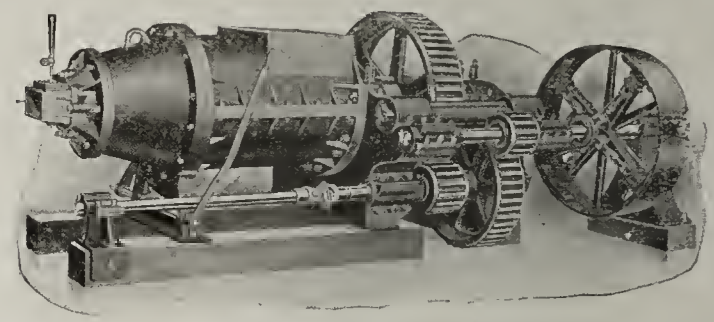
Eagle Repress



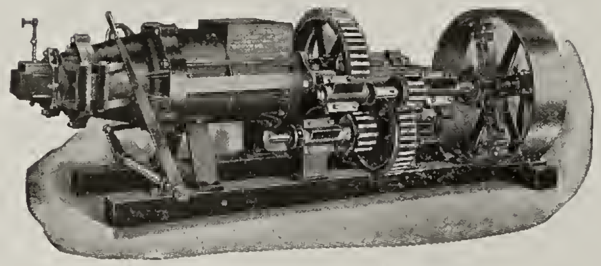
Roofing Tile Press



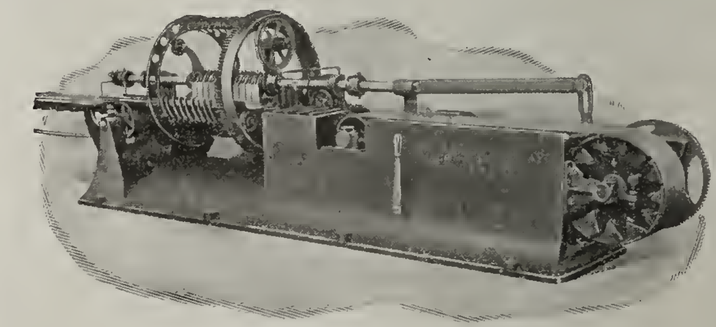
No. 65 Auger Brick Machine



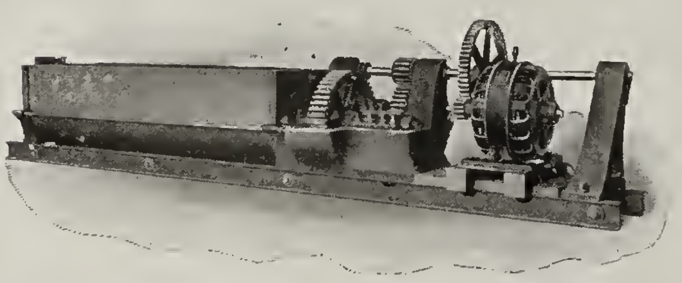
Special Giant Brick Machine



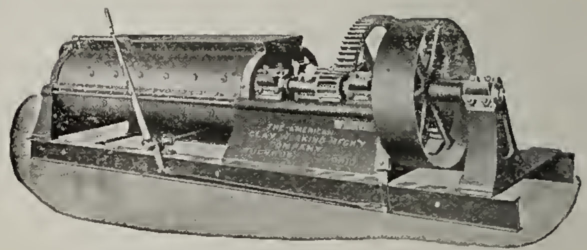
No. 2 Giant Brick Machine



No. 83 Automatic Cutter



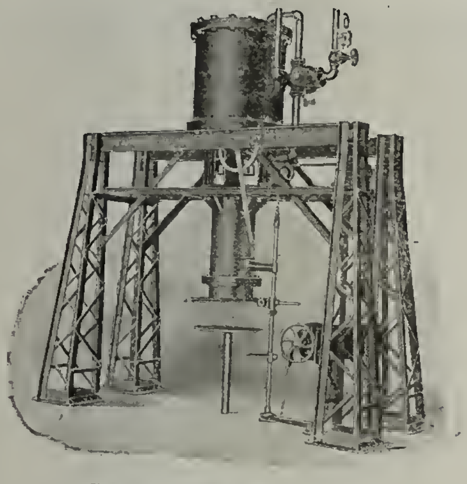
No. 51 Electrical Driven Pug Mill

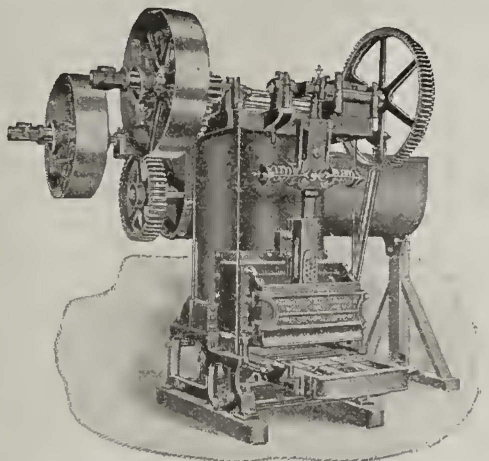


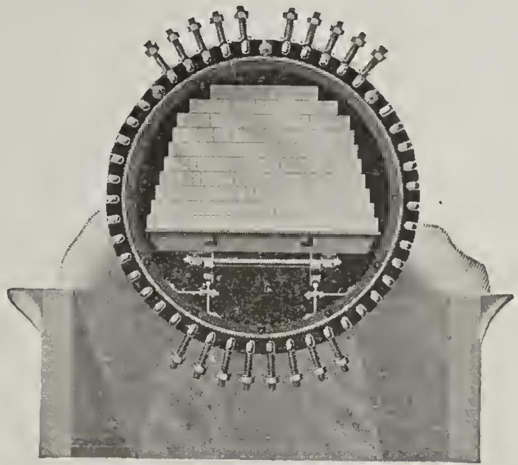
No. 38 Double Shaft Pug Mill

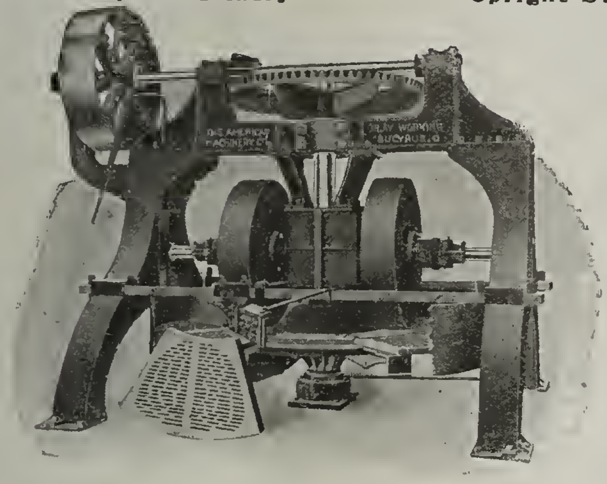
We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

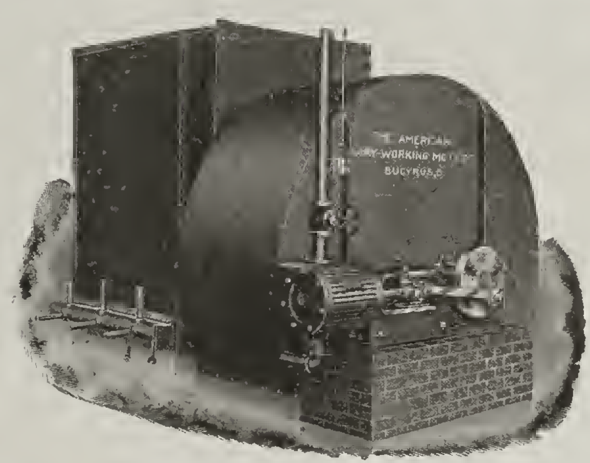
THE AMERICAN CLAY BUILT RIGHT RUN RIGHT MACHINERY COMPANY
BUCYRUS OHIO, U.S.A.

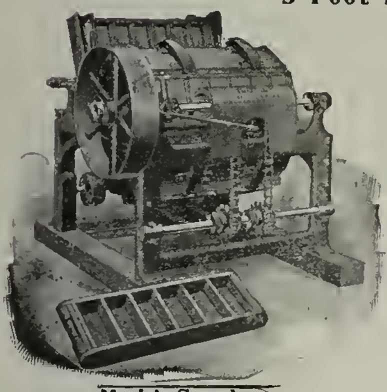

Sewer Pipe Machinery

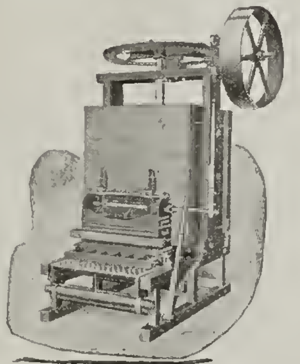

Upright Stock Brick Machine

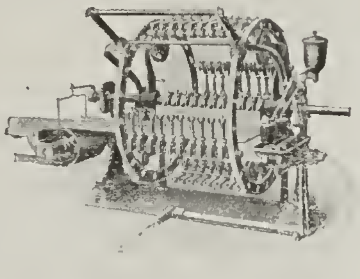

Sand-Lime Brick Machinery

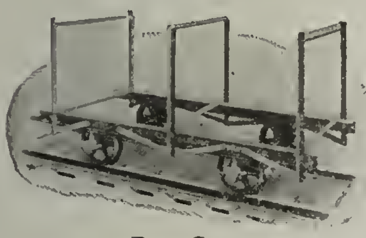

9 Foot Dry Pan


Blower Dryer Apparatus

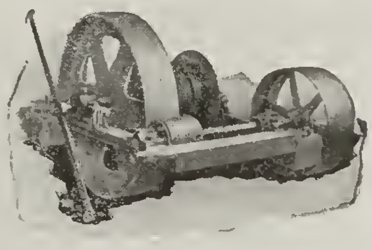

Mold Sander


H. P. Brick Machine


No. 62 Hand Power Cutter


Dry Cars

Disintegrators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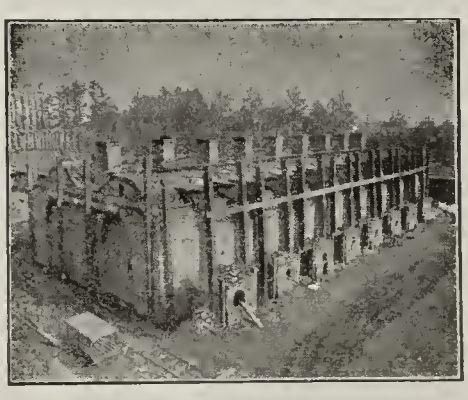
Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers



The Dennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8, 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

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TESTED TO 350 LBS.
"CHILDS"
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TO PLAY ON FIRE TURN UPSIDE DOWN

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate. Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

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Sole Manufacturers
Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

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Revolving Screens Air Separators
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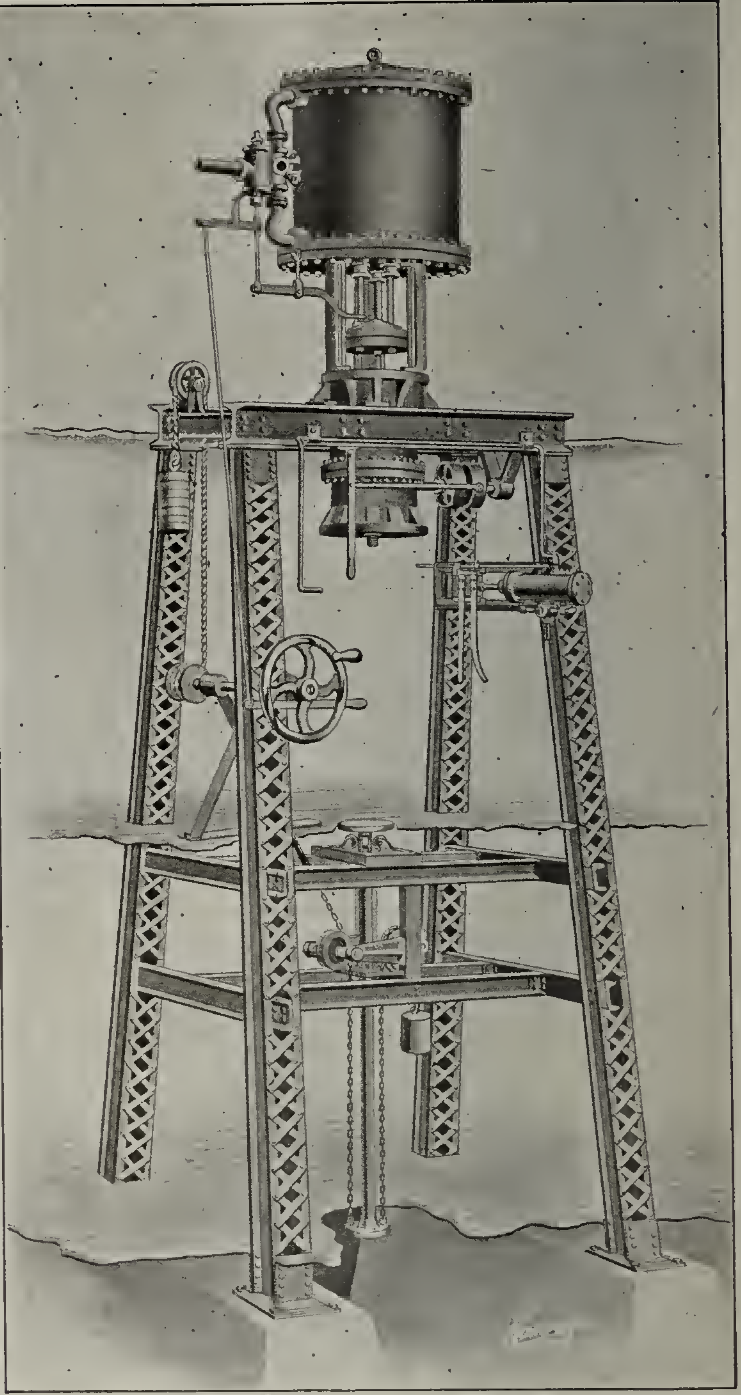

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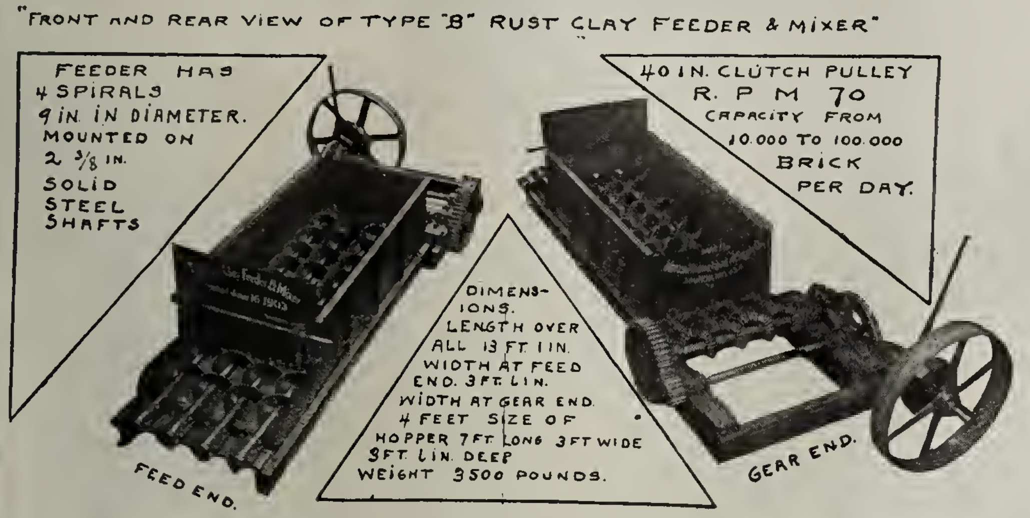
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FEEDER HAS 4 SPIRALS 9 IN. IN DIAMETER. MOUNTED ON 2 3/8 IN. SOLID STEEL SHAFTS
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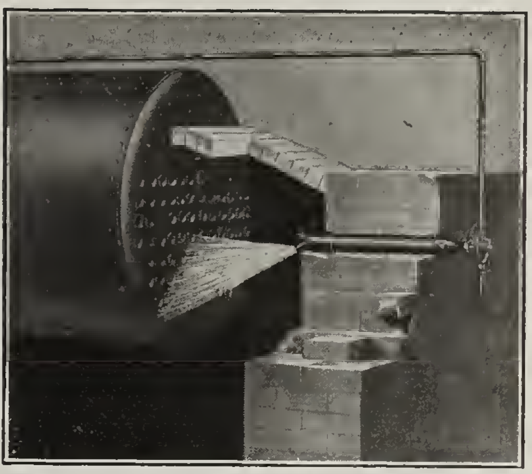
FEED END.
GEAR END.



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We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**

The Marion Flue Blower, (patented February 23. 1909) will save 10 per cent of your fuel. It will insure you clean tubes; will prolong the life of the boiler; it will prevent the accumulation of soot; it will save the cost of steam hose; it will enable you to clean your boiler while in commision, The accompanying cut shows how the Flue Blower is installed in the rear wall of your boiler. Each blower is fitted with a nozzle which rotates, and each opening in the nozzle blows a section of the boiler tubes at a time. We furnish different sizes as required, and positively guarantee to blow each flue clean

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MAKES REAL MONEY

Send for proof; also details about our Hand Presses, Dry Pans, Pulverizers, Mixers, Crushers, Elevators, Screens, Clay Plows, Clay Gatherers, Shafting, Hangers, Pulleys, Belting, Trucks, Barrows, Kiln Irons, Dryer Cars, etc.
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A Manual for all Engaged in the Manufacture of Articles from Clay

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HERE IS THE REMEDY.
PRECIPITATED
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The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

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They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

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C. K. WILLIAMS & CO.
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Haigh's New System of Continuous Kiln
Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understaud and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

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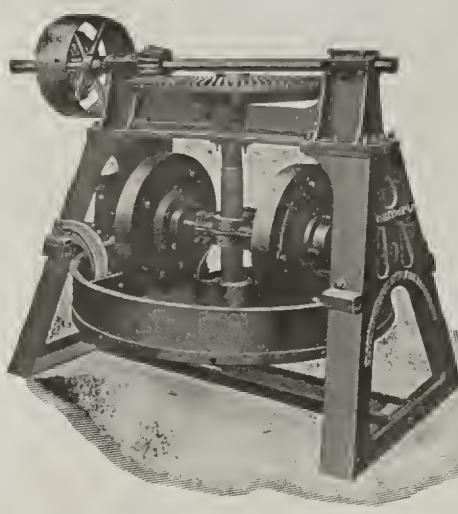

Masssive and well proportioned.
Best material.
Time tried and reliable.
Large capacity.
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Independent or yoked mullers.

Send for specifications and prices before buying.

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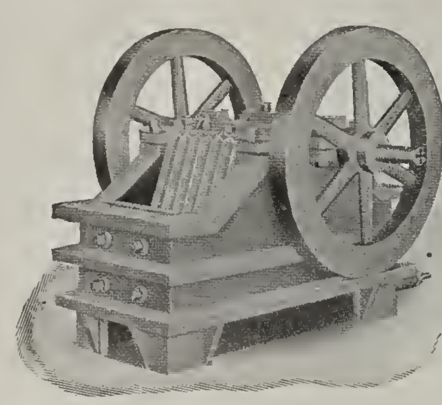

This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

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THE HAYDEN
BRICK TESTING RATTLER

For testing paving brick.
Built to the standard specifications of the N. B. M. A.
Best material and workmanship.

Send for descriptive matter.

The P. HAYDEN S. H. CO., Foundry and Machine Dept.

Manufacturers of

WET AND DRY PANS, CLAY CRUSHERS, STEAM CLAY PRESSES,
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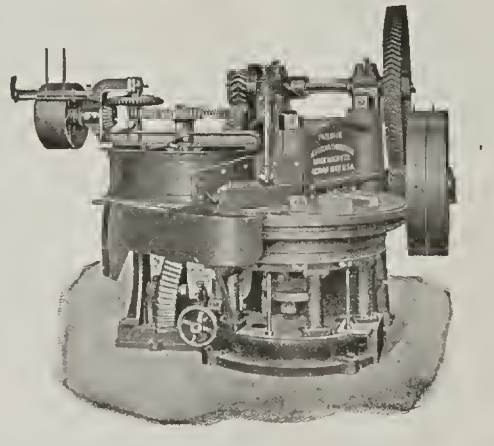
The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
SAGINAW W. S., MICH.



Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and we defy contradiction.

THE BURNER WITH THE VIBRATING FLAME

SCHURS PERFECTED OIL BURNERS

DESIGNED ESPECIALLY
FOR BURNING BRICK
AND ALL CLAY WARE
Patented July 21, 1908

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Especially Adapted to Common Up-Draft Kilns

By the adjustment of the tip a vibrating flame is produced which forces the gases to the center of the kiln and back to head, **insuring a uniform burn** The SCHURS is the most durable and most economical Burner made. Saves labor and fuel, and will atomize the heaviest oils.
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Nine Foot Iron Frame
DRY PAN

With Independent
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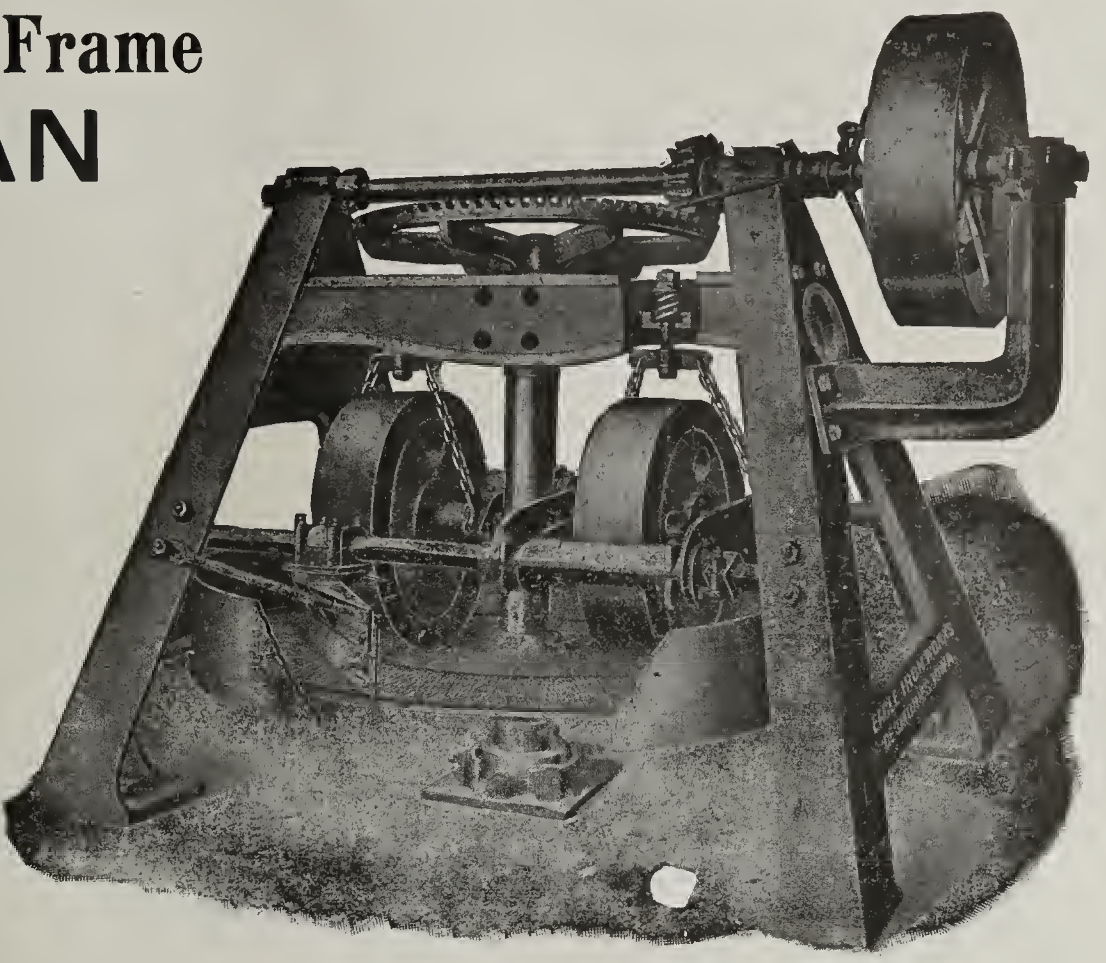

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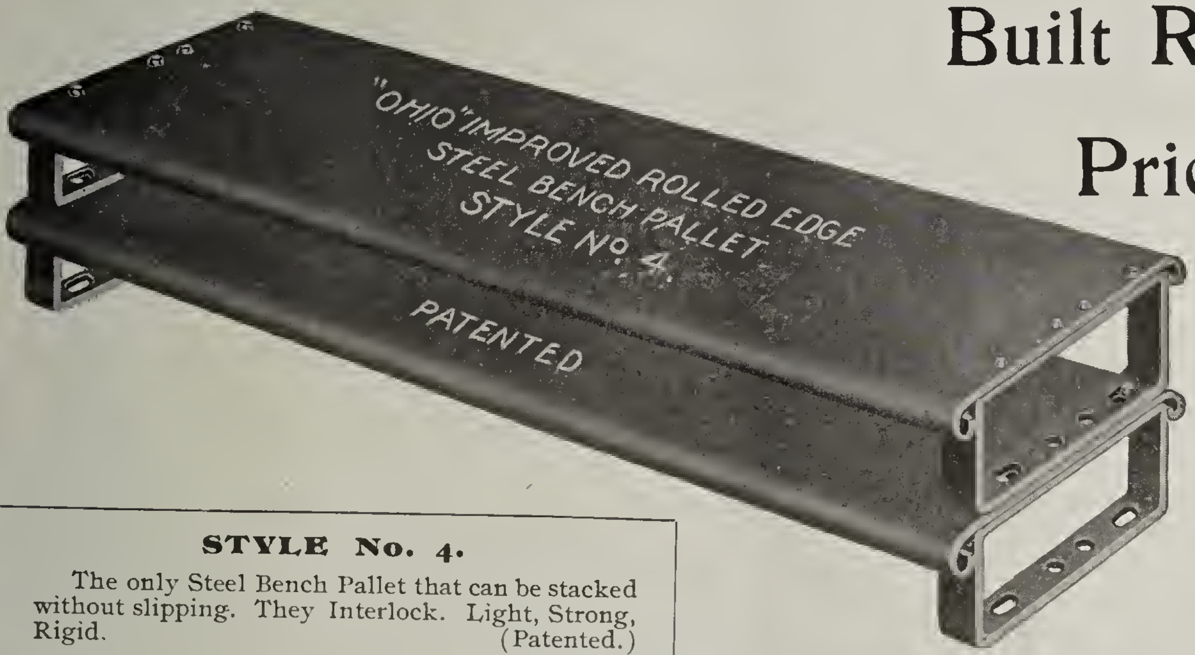

STYLE No. 4.

The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

Built Right,

Price Right,

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ALL STYLES

MADE EXCLUSIVELY BY

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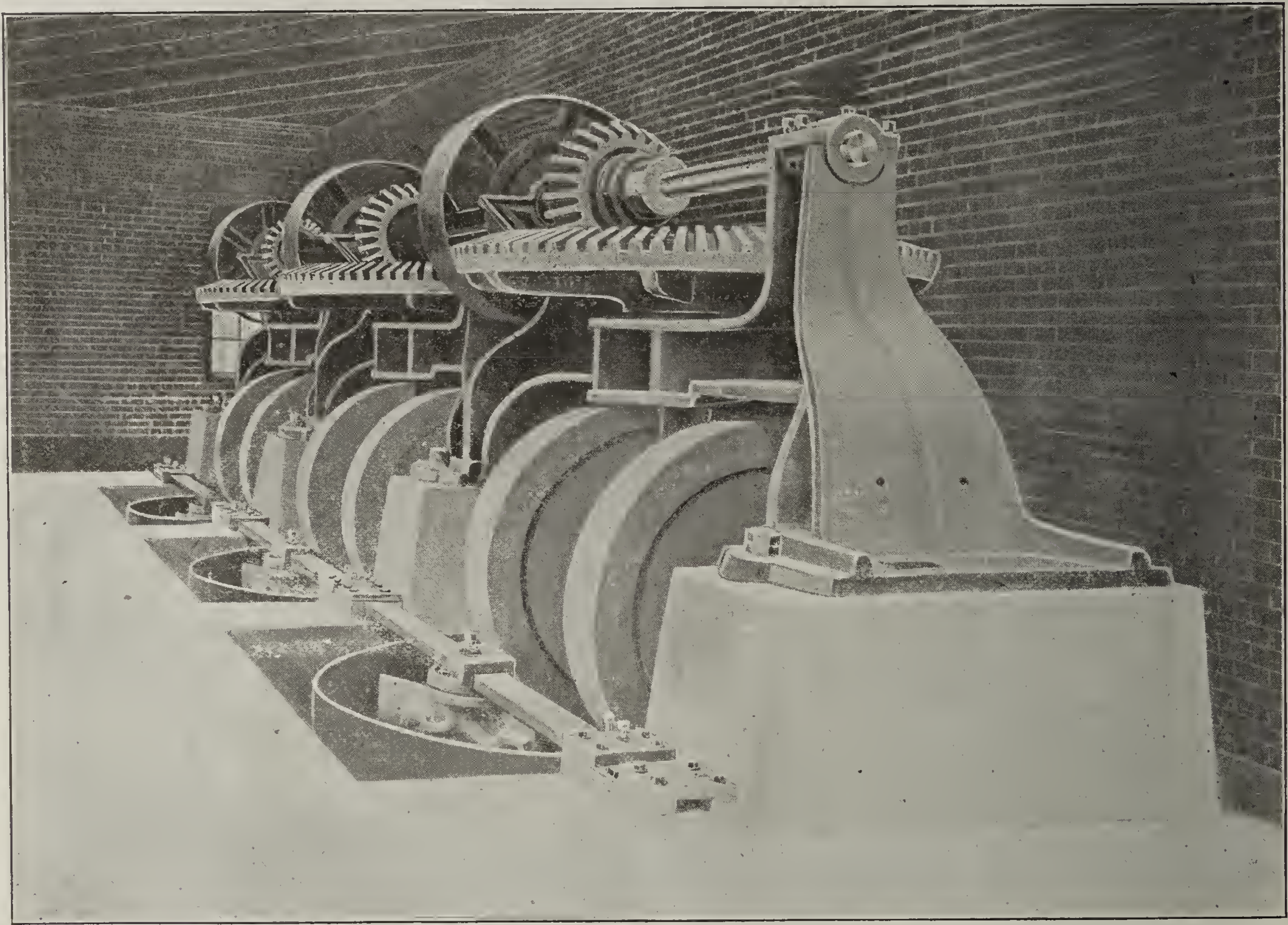
Our Dry and Wet Pans are worth your investigation

We build them eight, nine and ten feet in diameter, weighing 30 to 50,000 pounds. They have great crushing and screening capacities



We also manufacture complete equipment for Sewer Pipe, Brick, Terra Cotta Drain Tile and Fire-Proofing Works

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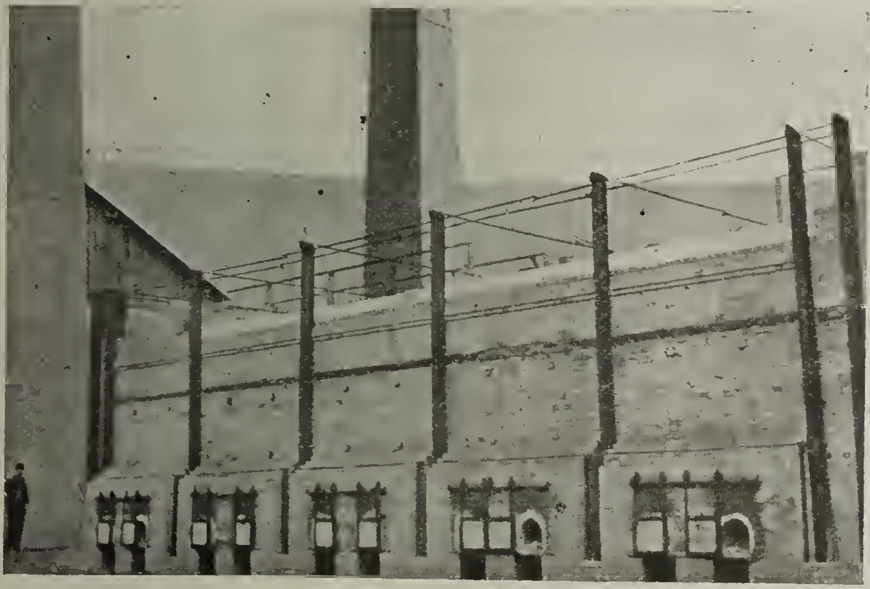
The Means Foundry & Machine Co.

Eastern Agents
WILSON KILN & DRYER CO.
West End Trust Bldg.
Philadelphia, Pa.

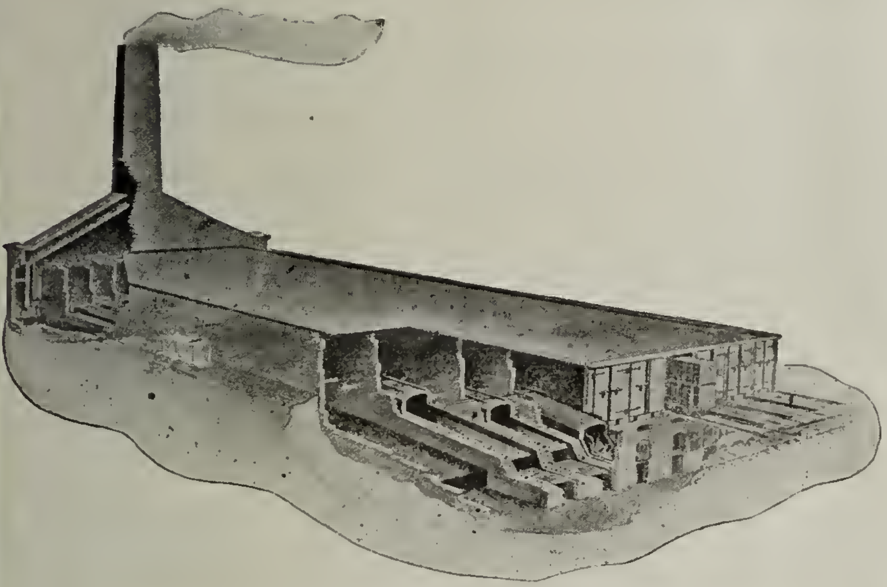
Steubenville, Ohio

Wilson Kilns and Dryers

Built by Wilson Kiln & Dryer Co., Capacity 100,000 Brick Per Day.



Patent July 8, 1902



Patented March 3, 1903. No. 721988

Why are we always busy?

Because we study the brick business and build kilns and dryers to suit the conditions.

Our smoke-consuming furnaces, and continuous waste heat system, kiln floors, and test kilns have been in every day use for several years and have proven very satisfactory.

Our Brick Kilns are modern in every way, and have proven successful wherever built.

Our Radiation Heat Dryer has more radiating surface than any other dryer in use.

The Kilns and Dryers are very economical in construction and operation. We believe we have the most satisfactory Kiln and Dryer system to produce results on the market.

Wilson Kiln & Dryer Co.
West End Trust Building
Philadelphia, Pa.

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Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

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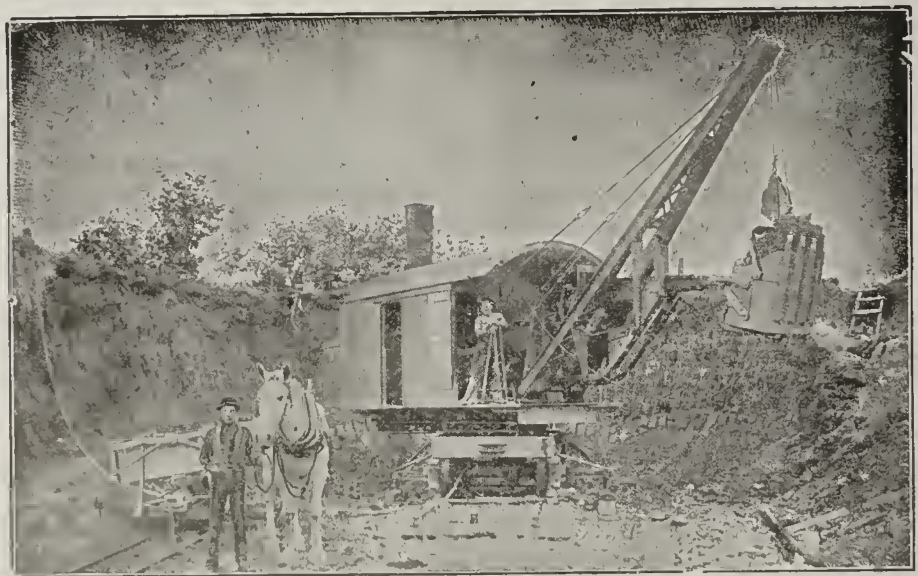
HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.



Type No. 1 Shovel—Geo H. Clippert & Bro., Detroit, Mich.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adiusted to cut to any desired level.

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Wire Cables used Instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

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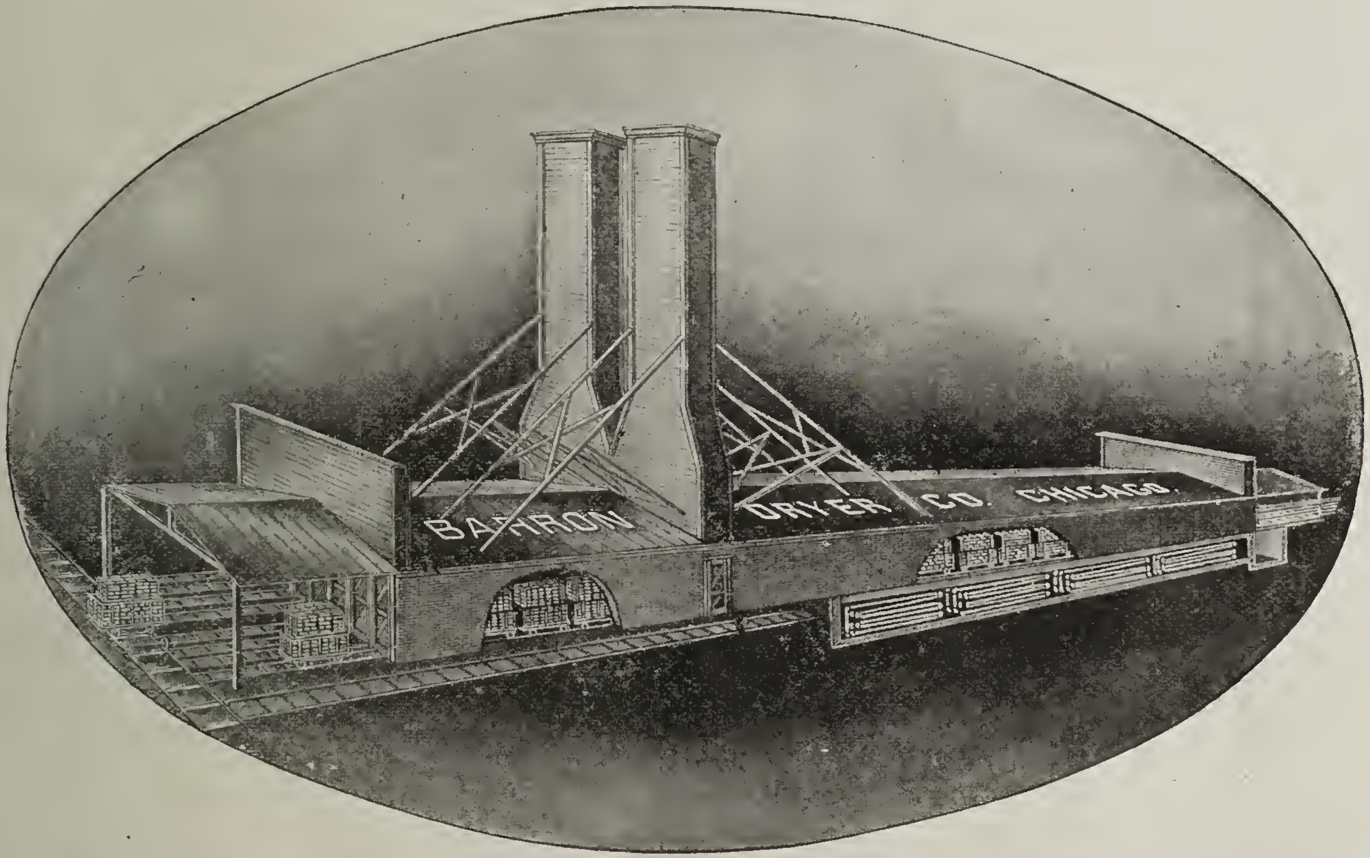
CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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CASTINCS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

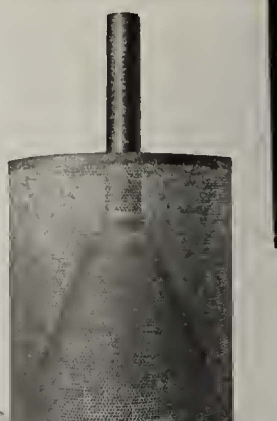
OFFICE AND SHOPS **18 SLOAN STREET** ON C. & N. W. RY. **CHICAGO**

THE "MARTIN" CLAY-WORKING MACHINERY

IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY, DURABILITY AND

COMPLETE
SATISFACTION
THROUGHOUT



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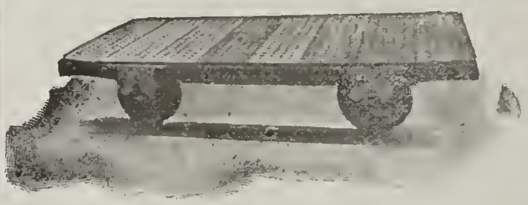
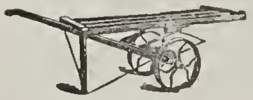
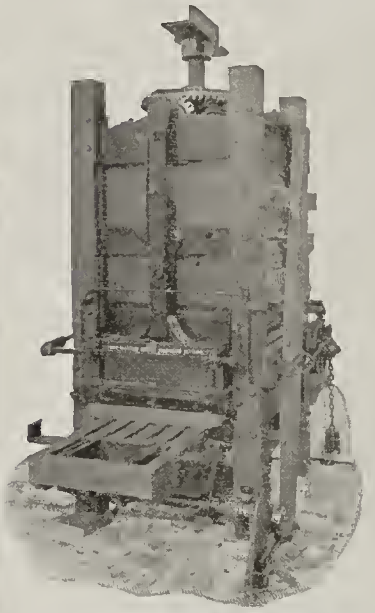
WE GUARANTEE OUR MACHINERY



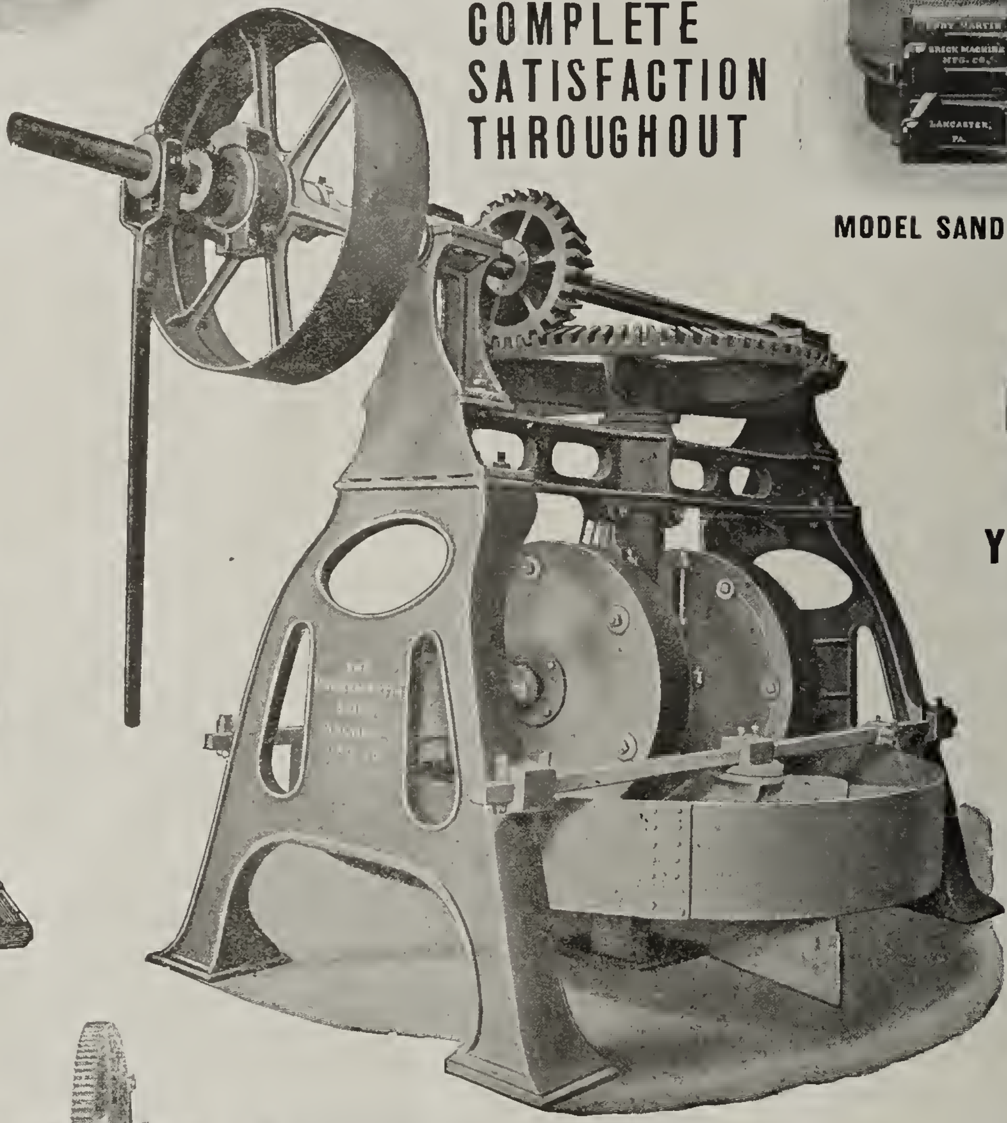
DRYER CARS



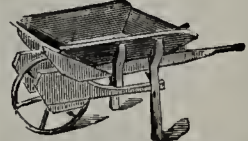
TRUCKS



HORSE POWER MACHINE



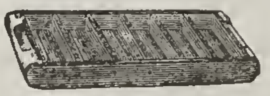
YARD SUPPLIES



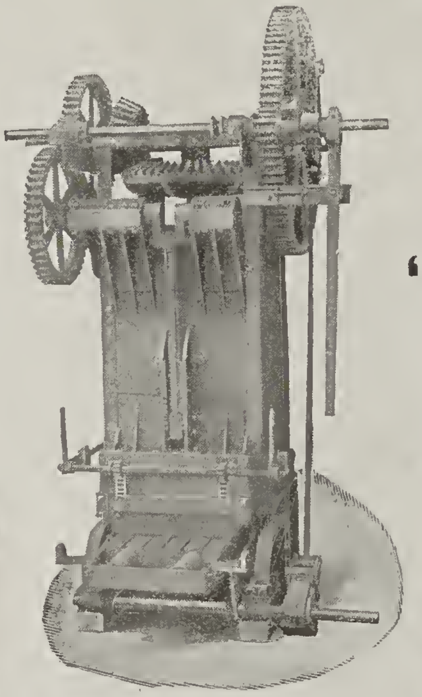
OF ALL KINDS BUILT RIGHT

TRUCKS

BRICK MOULDS THAT ARE BUILT FOR HARD USAGE IS THE "MARTIN." TRY A SET



WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



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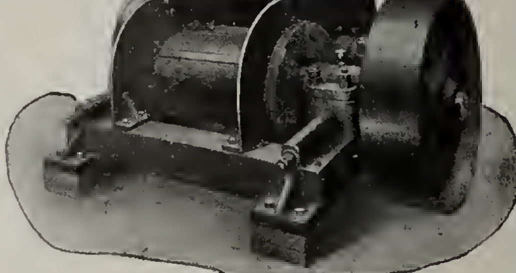
"WE FURNISH EVERYTHING THE BRICK-MAKER NEEDS"



STYLE "P" CRUSHER

MARTIN

CLAY-WORKING EHGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

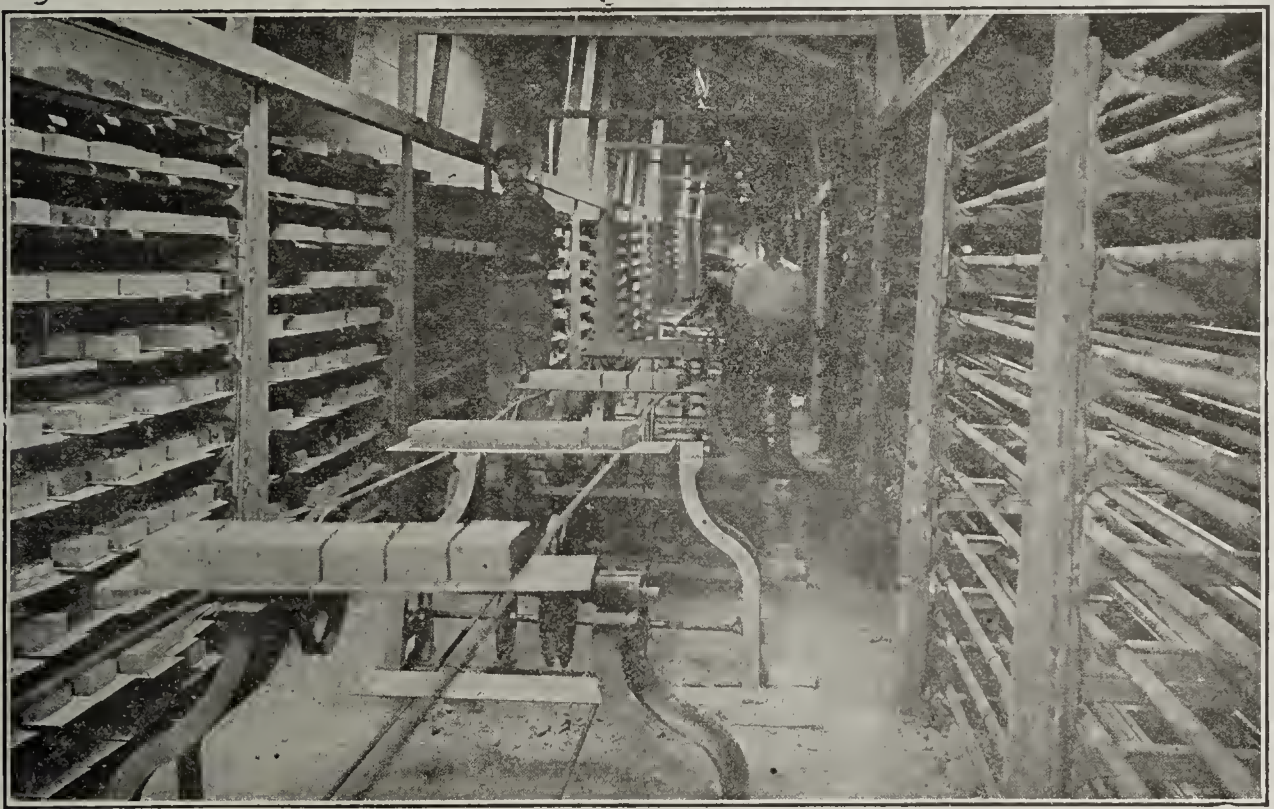
PATENTED

February, 22d, 1898. No. 599509
October 10, 1905. No. 95520
November 14, 1905, No. 804489
May 26, 1908. No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞



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ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direct supervision of the Factory Office at Lancaster, Pa.

FOR FURTHER INFORMATION, ADDRESS

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Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

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We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

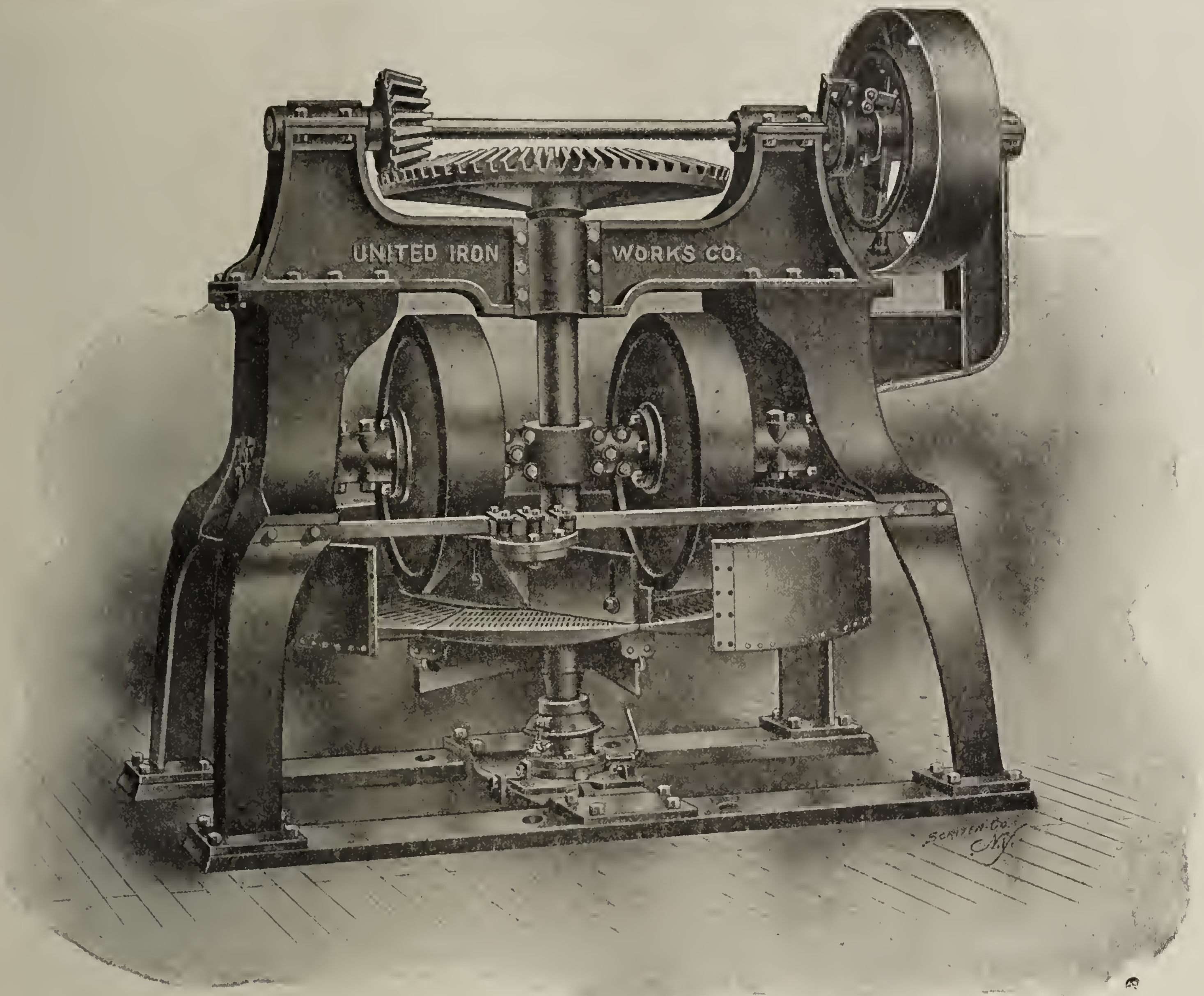
The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU. ASK US ABOUT IT AND LET US SHOW YOU

International Sand-Lime Brick & Machinery Company

Engineers and Contractors for Silicate Brick Factories

90 WEST STREET, NEW YORK, N. Y.


UNITED IRON WORKS CO.
SCRIBNER-CO. N.Y.

Here's What One of the Largest Cement Companies in the United States Says About our "Pittsburg" Dry Pan:

"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,
WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

UNITED IRON WORKS COMPANY

General Offices: SPRINGFIELD, MO.

SPRINGFIELD, MO.; AURORA, MO.; IOLA, KAS.; PITTSBURG, KAS.
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No. 217 E
Electric Side Dump Car.

No. 145
Ball Bearing Turntable. Made in sizes
from 4 ft. to 11 ft. in diameter

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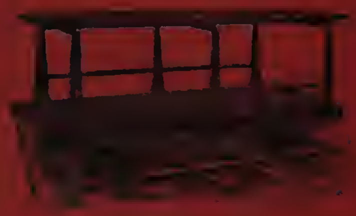
CARS FOR BRICK YARDS, CEMENT WORKS, CONCRETE BLOCK MANUFACTURERS, STONE QUARRIES, ETC.

NO. 217-S
Either Side Rocker Dump Car.

TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.



NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights

NO. 142
Transfer Car.

NO. 129
Double Deck Car.

[illegible]

The Atlas Car and Mfg. Co.
CLEVELAND, OHIO

UNIVERSITY OF ILLINOIS

VOL. 34 No 12

CLAY RECORD

A JOURNAL DEVOTED TO
THE DISSEMINATION
OF ALL MATTERS
PERTAINING
TO THE
CLAY
INDUSTRY

June 30, 1909

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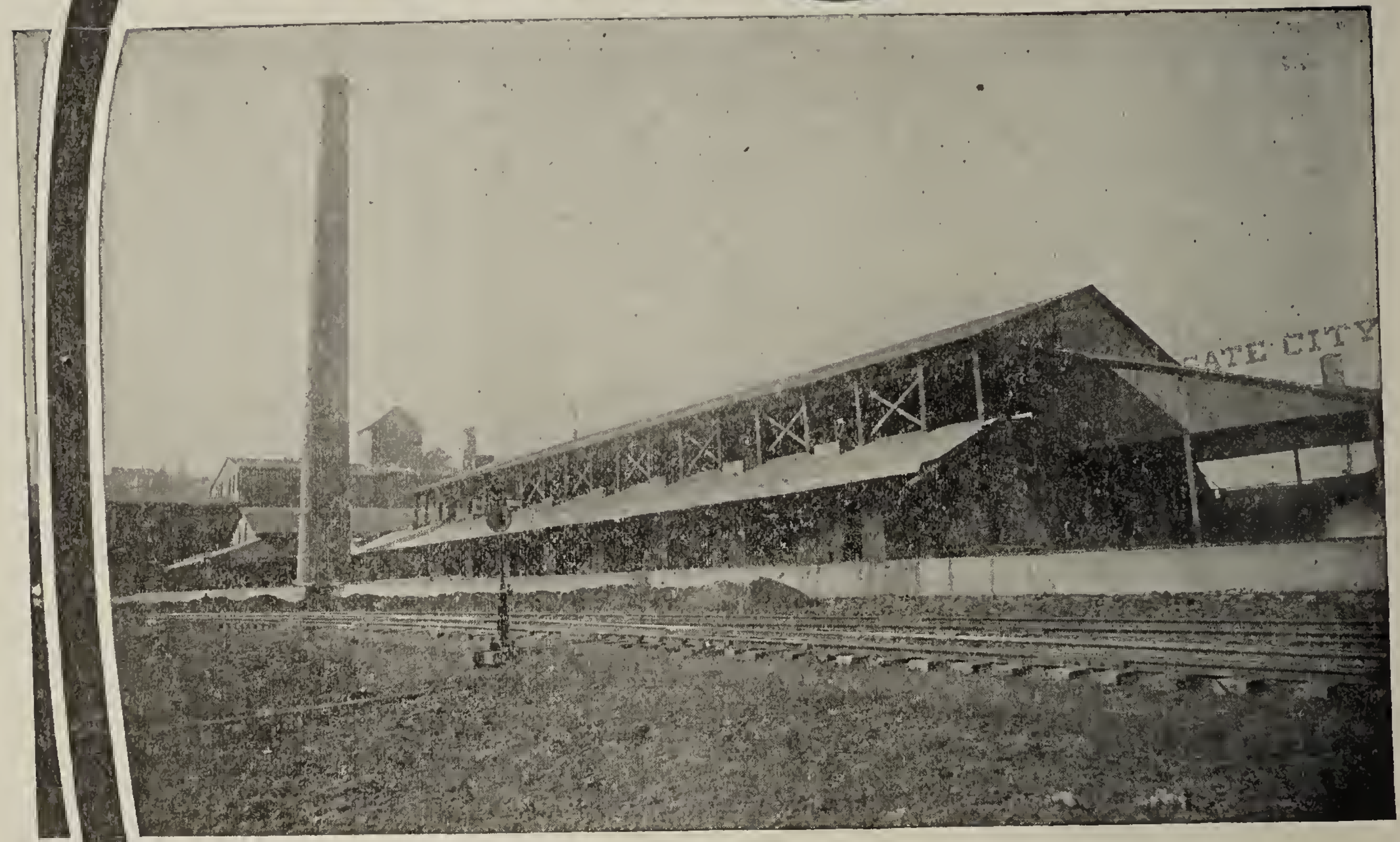

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No Toggles
Powerful
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We Design and Equip
Dry Press Brick
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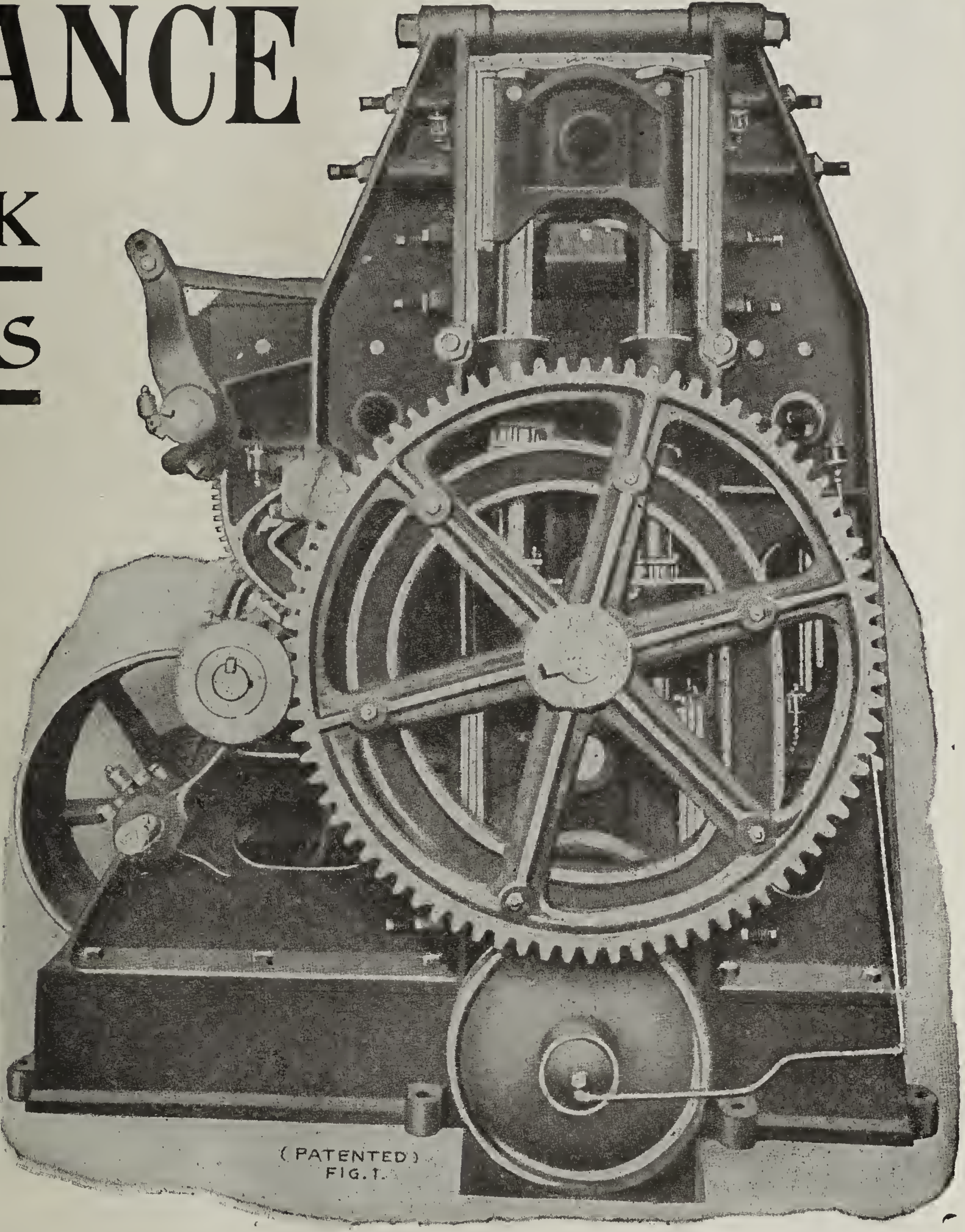

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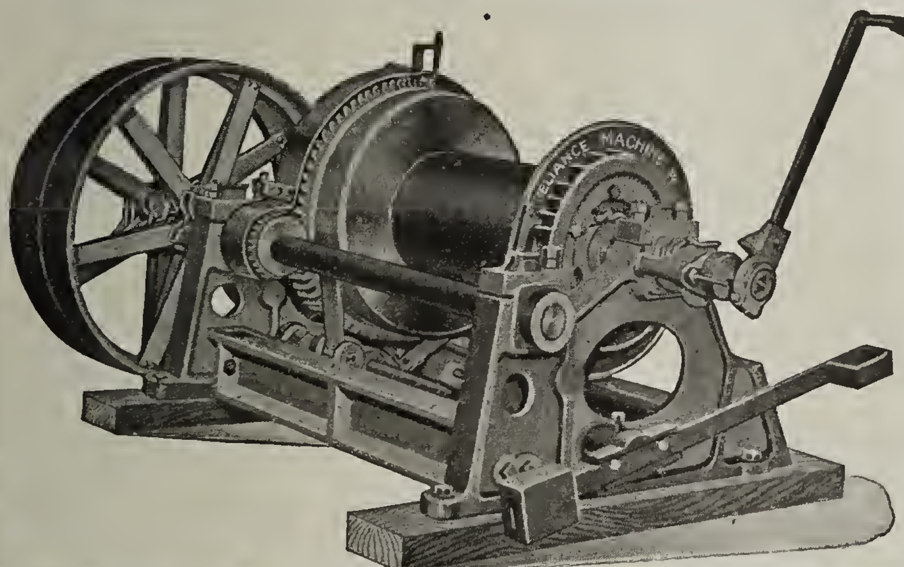

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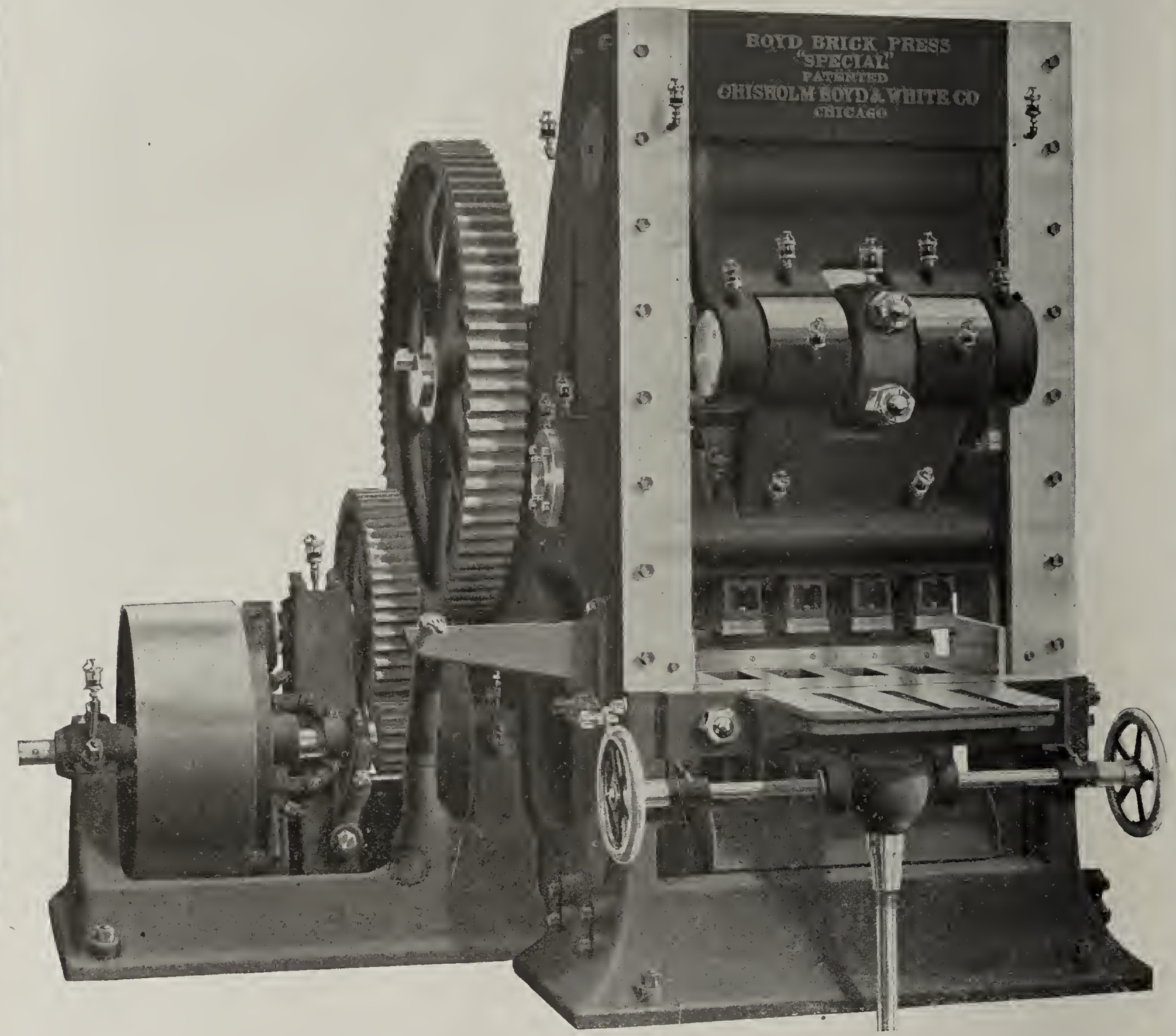

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Office and Works: 57th and Wallace Streets, CHICAGO, ILL.

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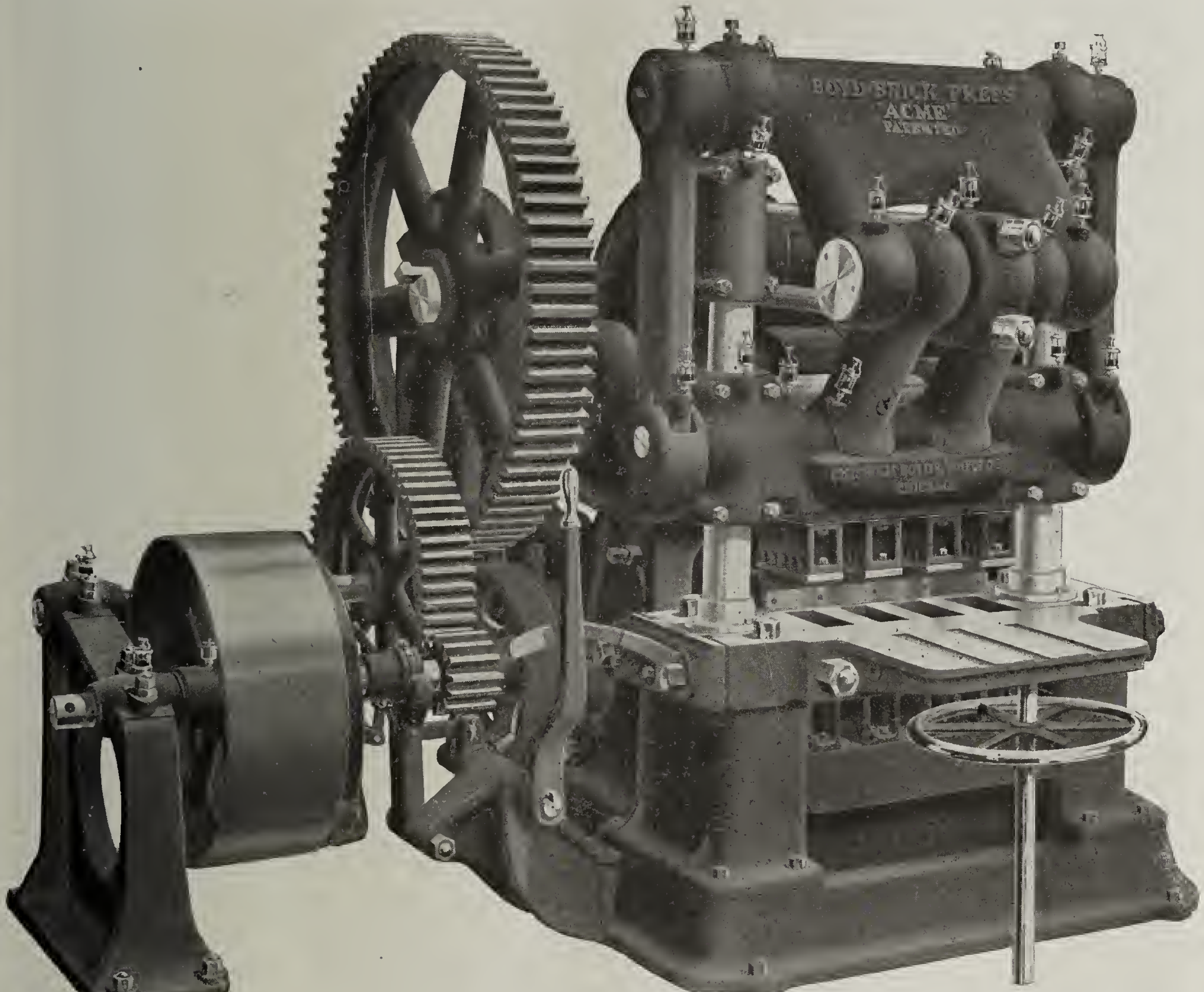

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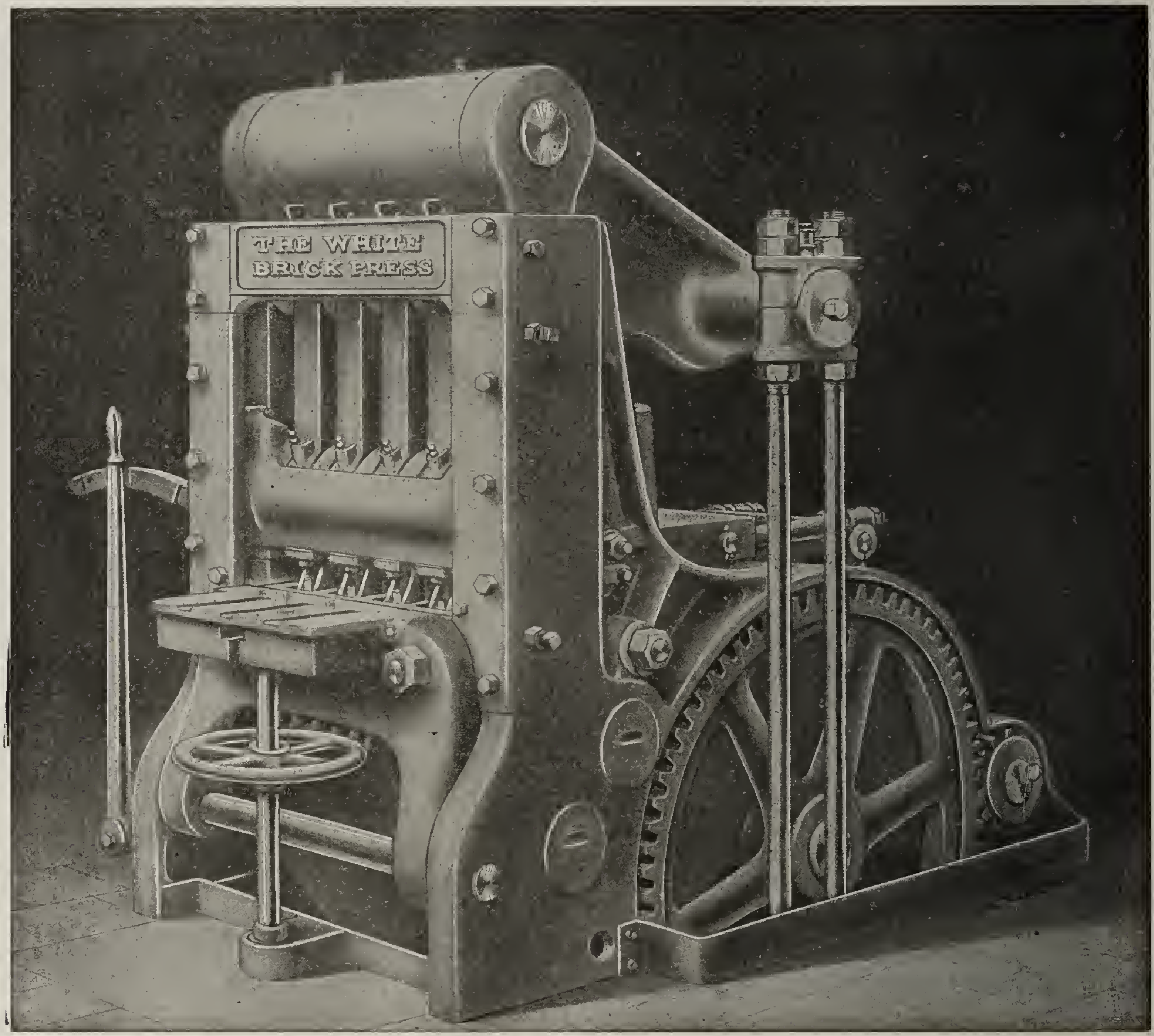

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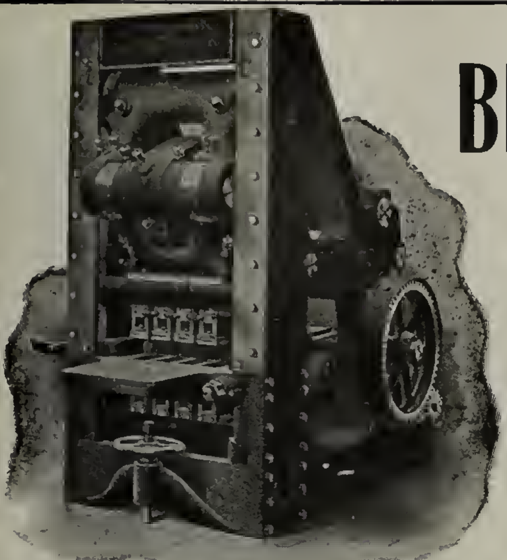

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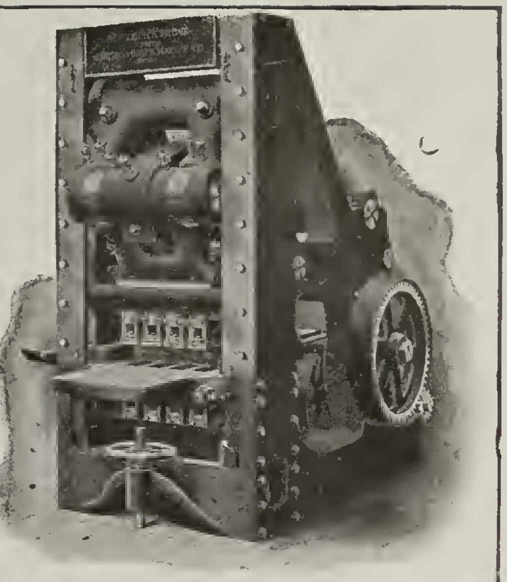
The highest development of the Art of Brickmaking Machinery so pronounced by the United States Government.



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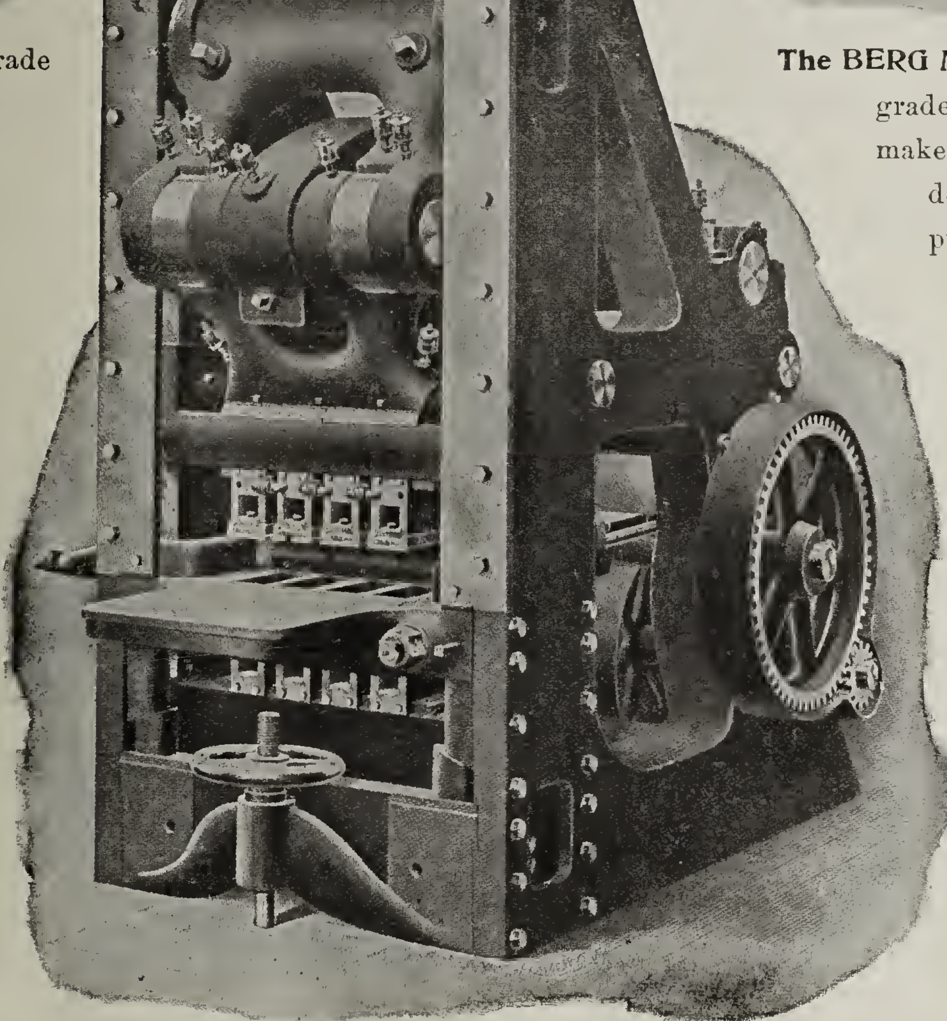

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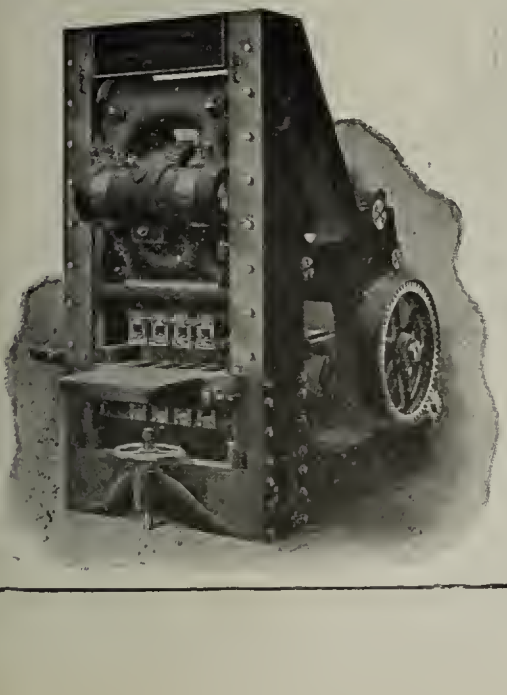

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OFFICE: MANNING CHAMBERS
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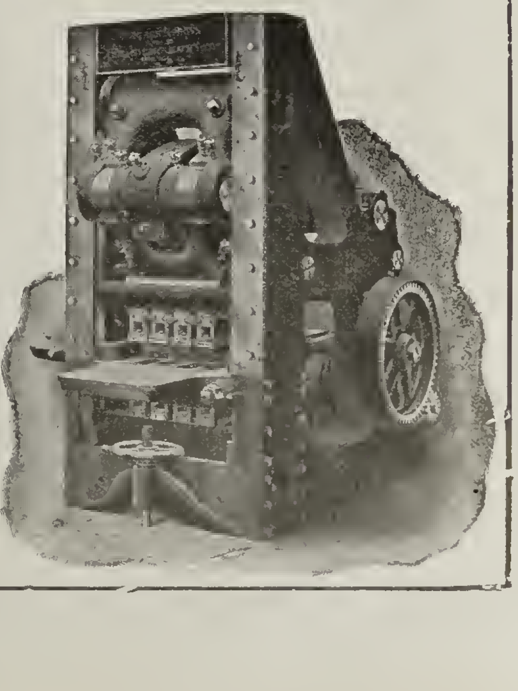

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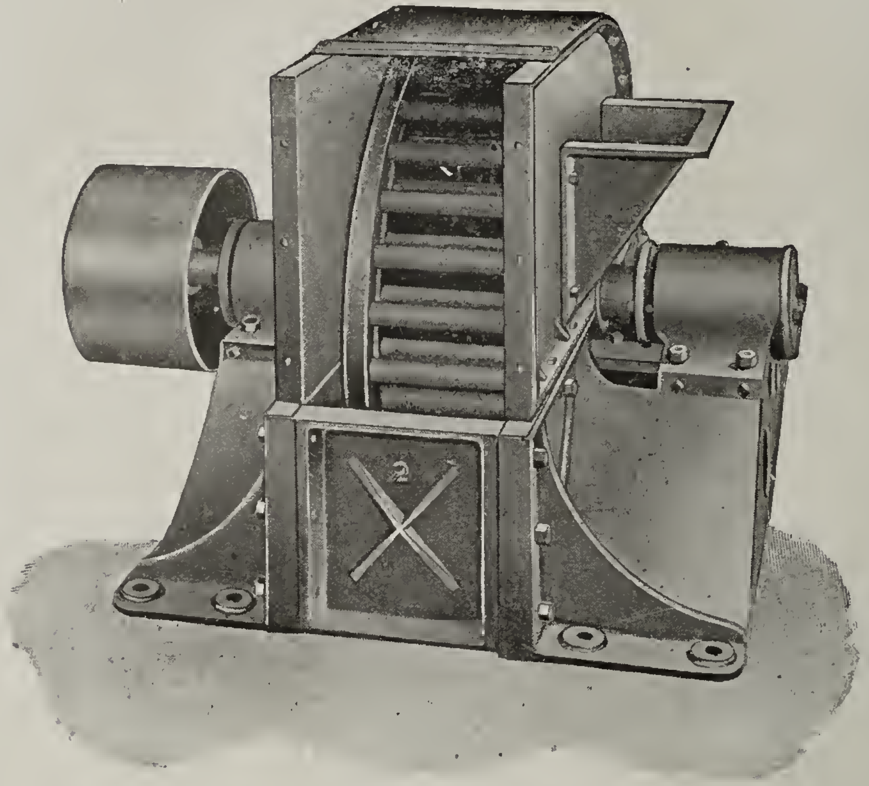
29"
36"
42"
50"

Fitted
with
Adjustable
Pins



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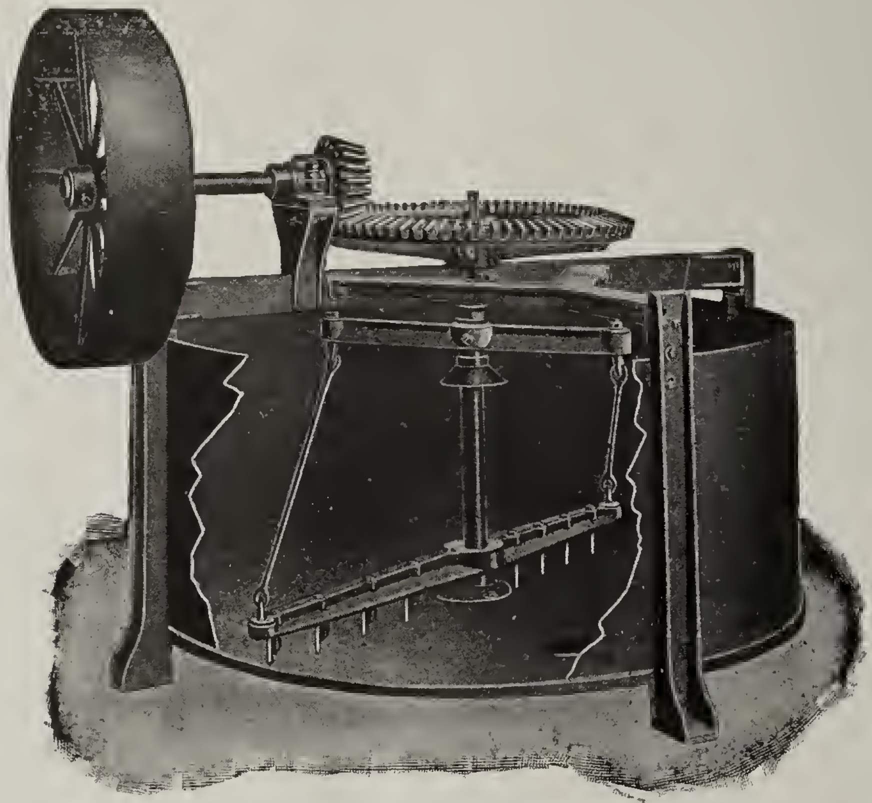

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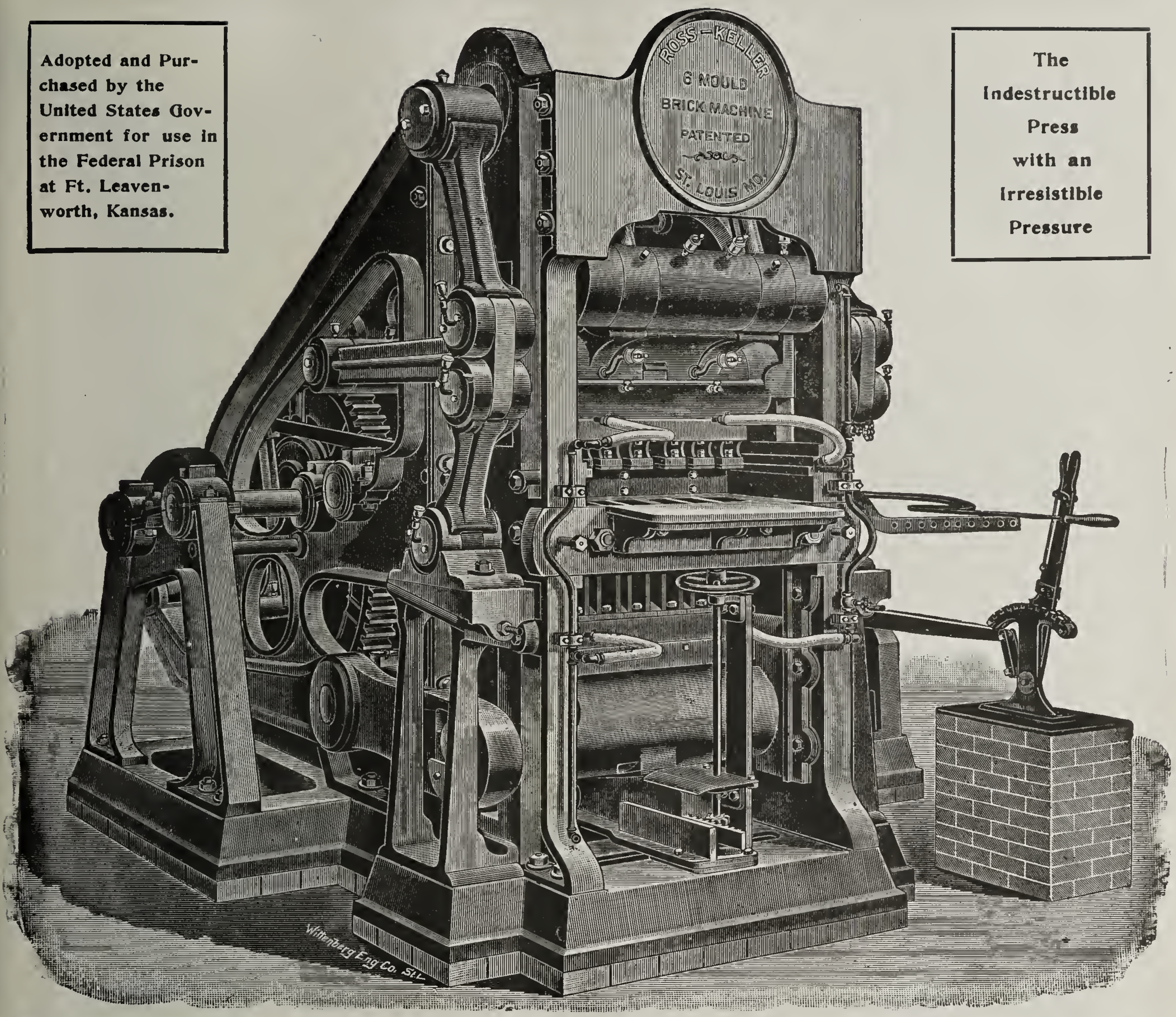

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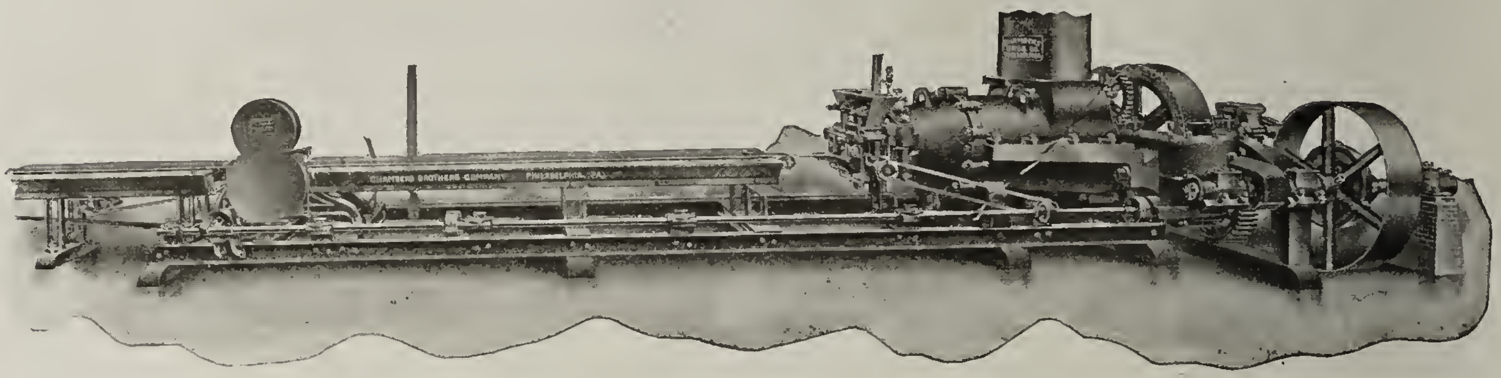

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For Grinding Tough Clays in which Small Stones may be Imbedded

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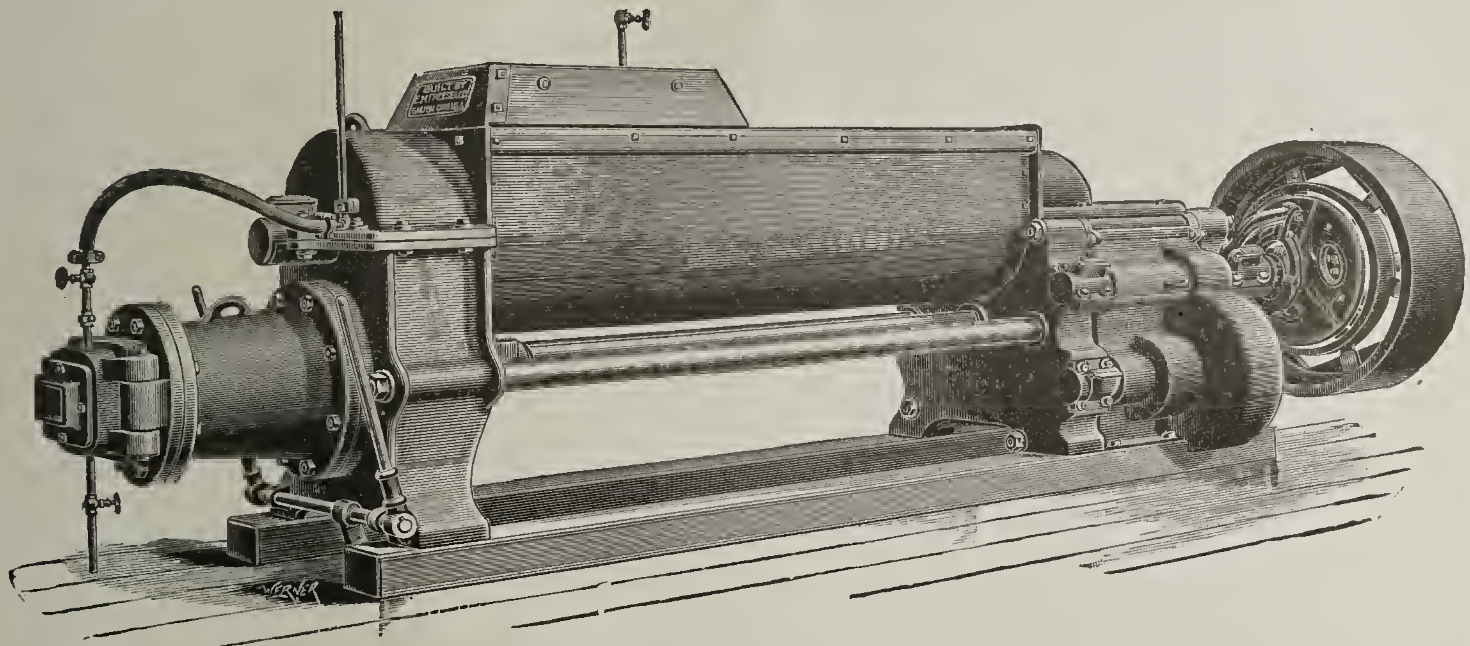

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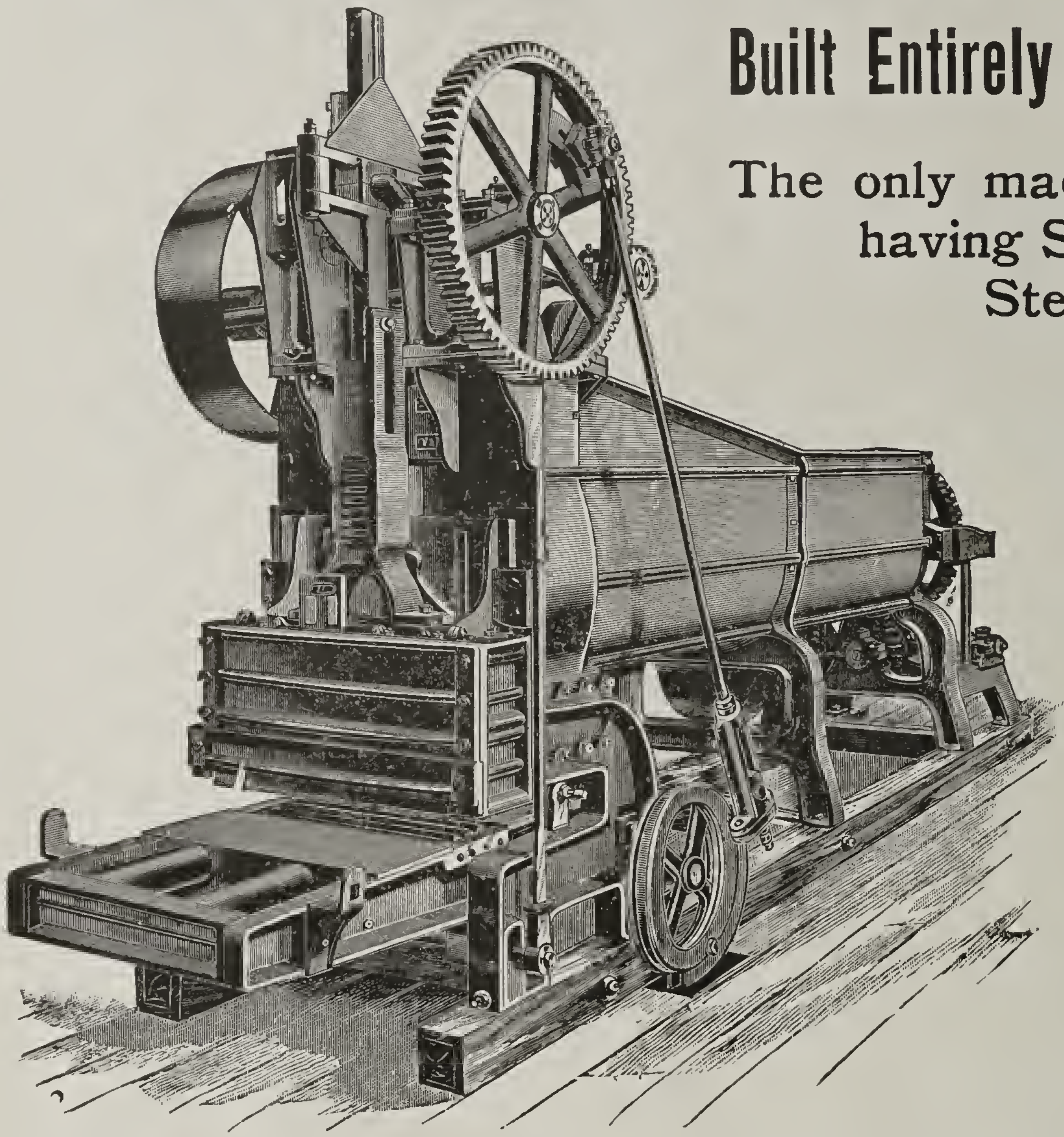

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Compound Disintegrators and Crushers

As Manufactured by Potts

Are the best and most complete machines. Where the clay contains limestone, the Disintegrator will separate the large stones and the Crusher pulverize the small ones.

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RING OILING BEARINGS

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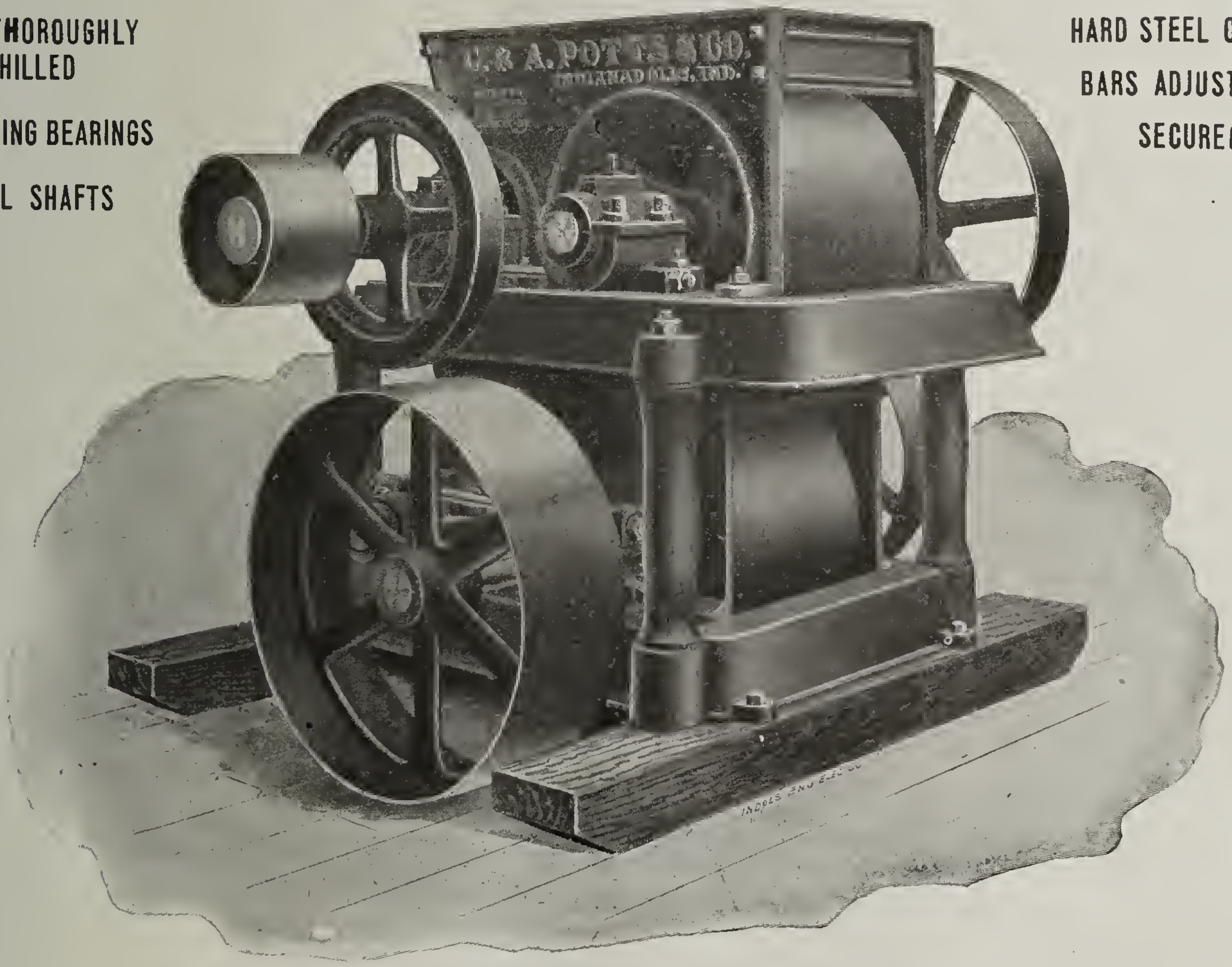
HARD STEEL CUTTING BARS ADJUSTABLY SECURED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These Machines are made only with RING OILING BEARINGS.

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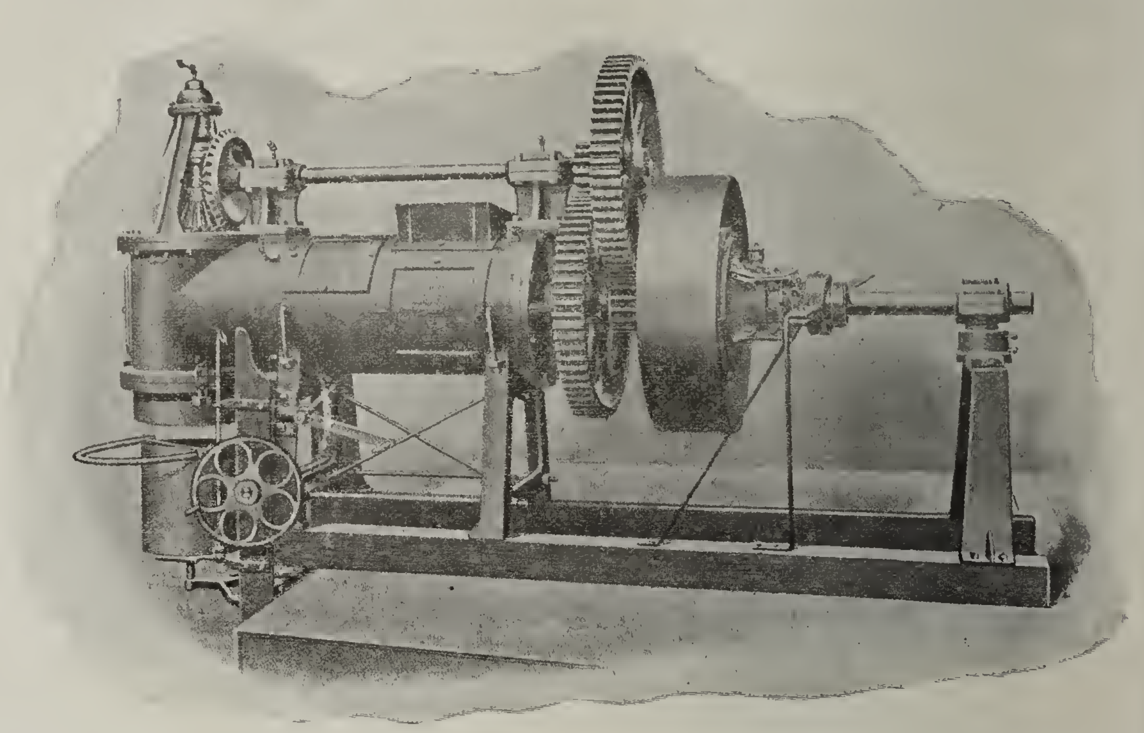
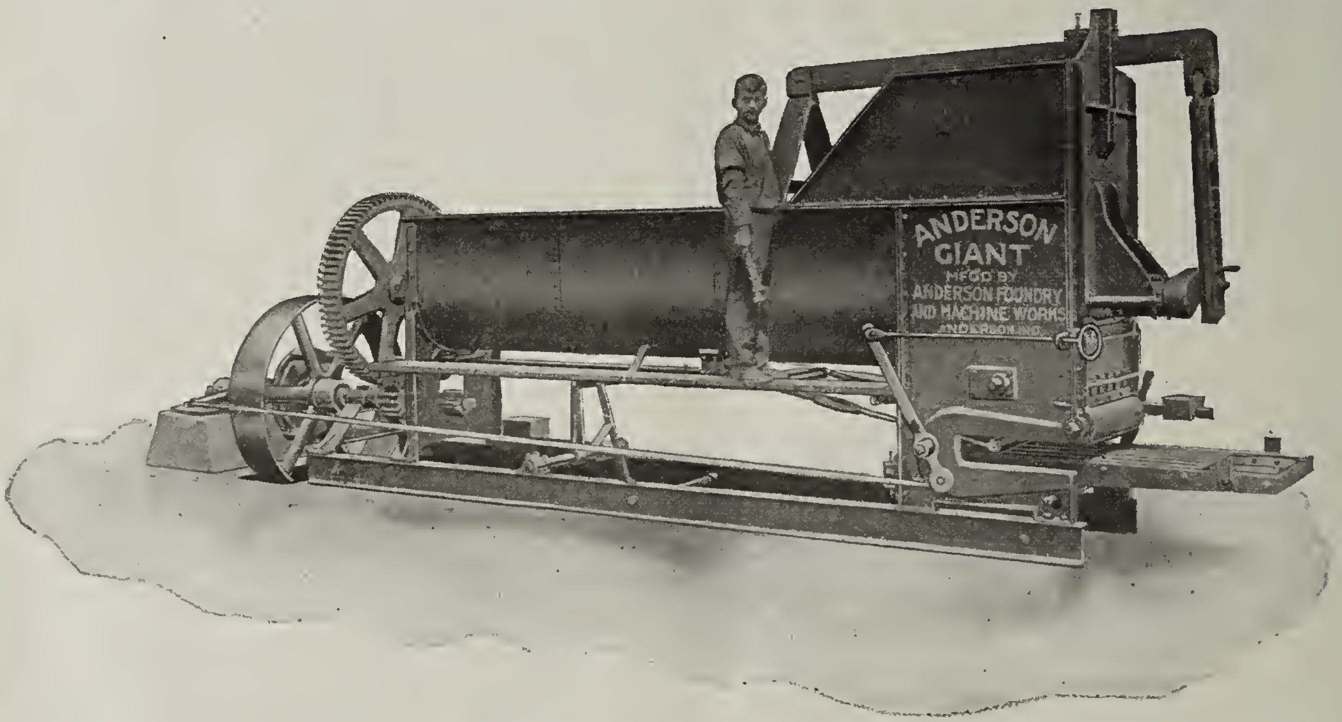


Our New 1909 Model Anderson Giant



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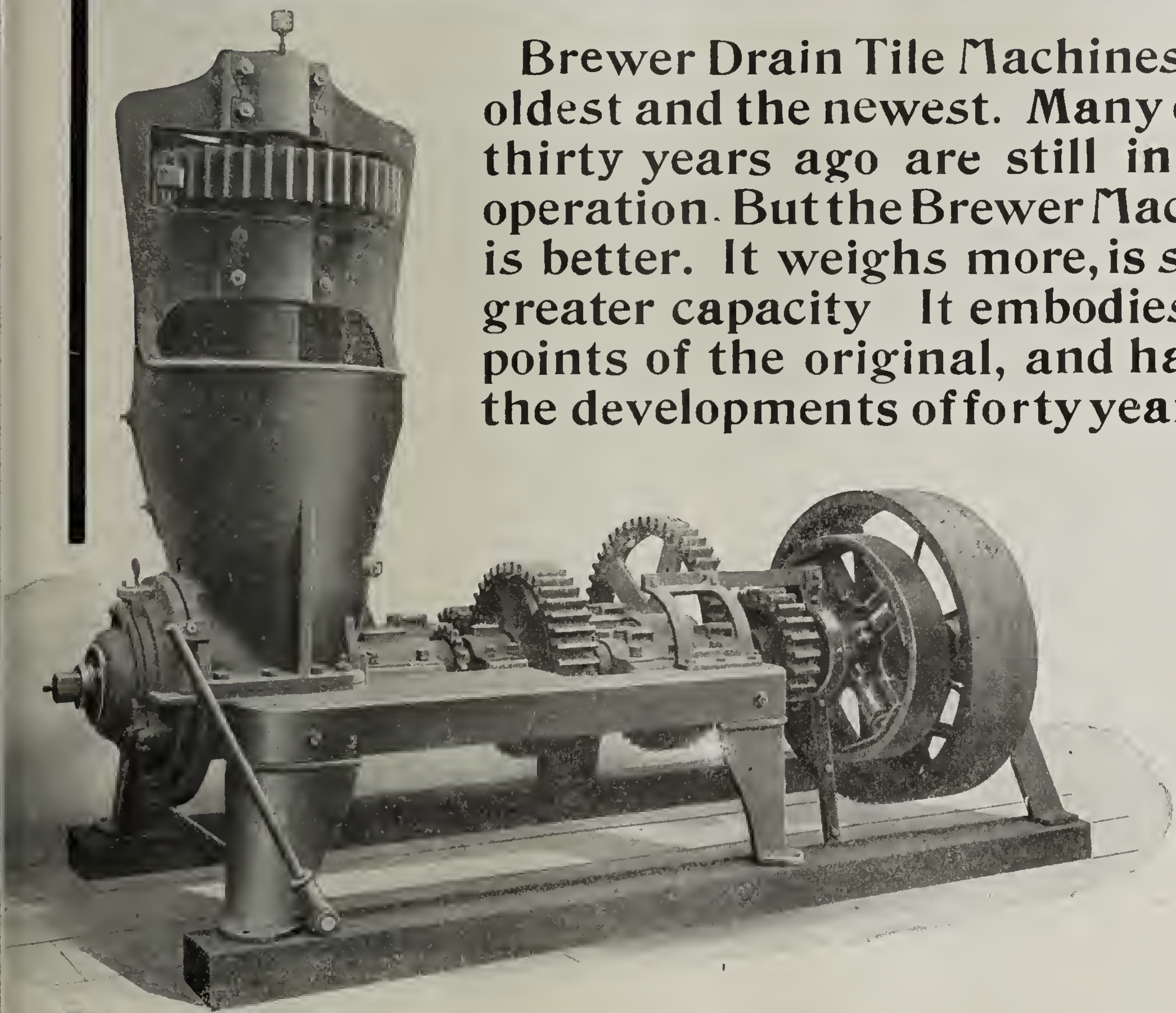

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We

Build

Three

Sizes

ranging in capacity from 1000 4-in. tile per hour up to all that can possibly be handled by any present day method. They range in weight from 5500 to 10500 pounds. The upright portions are cast in one piece and machined to the frame. The frame is cast in one piece. The knives are forged from hard, high-carbon steel.

The augers and casings are of white-iron. The cores of tile dies are held without bridge or bracket, or anything which parts the clay as it is being formed into shape. They make good tile where other machines fail.

If Marked
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Our catalog explains all about them and gives detailed specifications

H. Brewer & Co.

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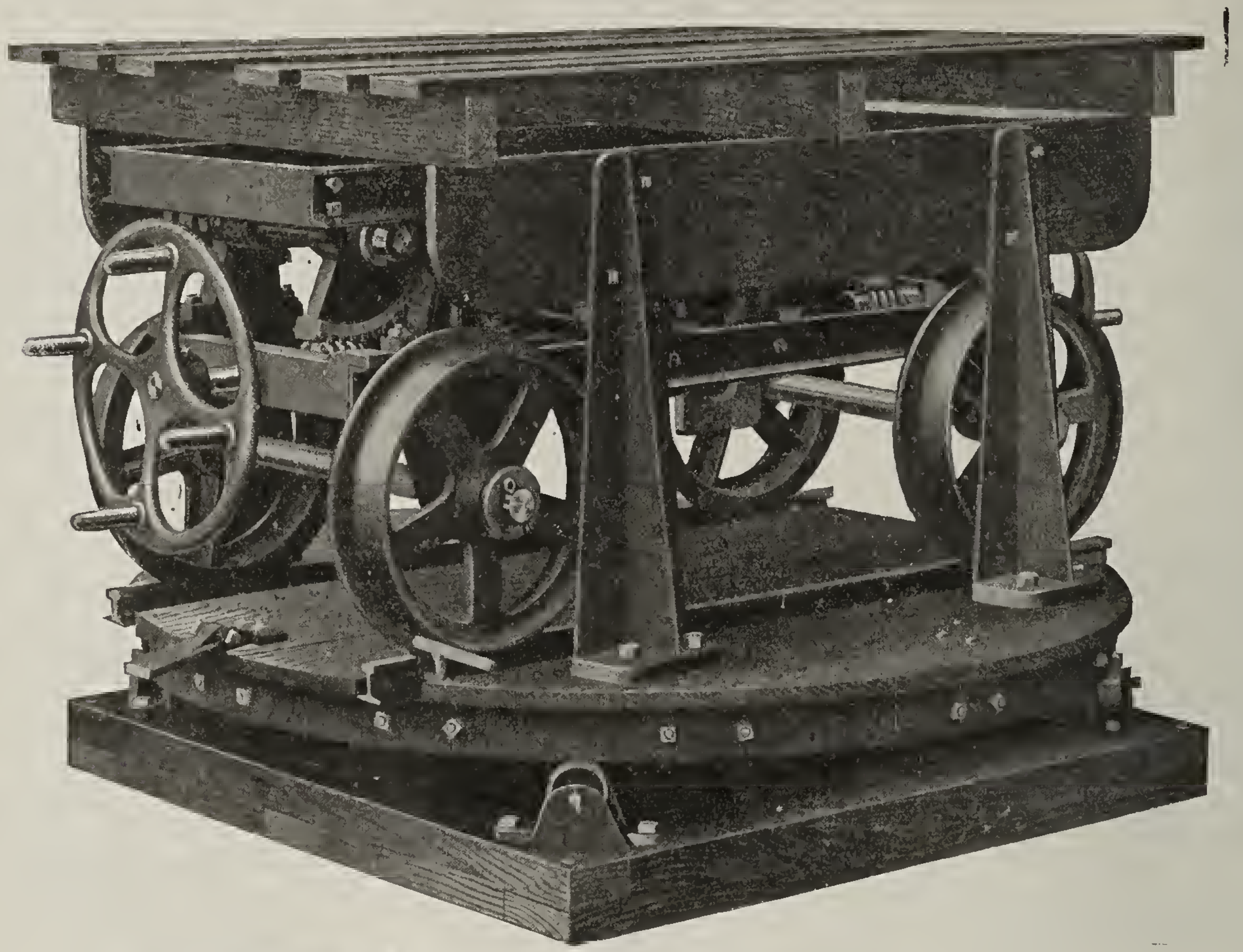

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Pay only for what you get and nothing for a piece of "Blue Sky."

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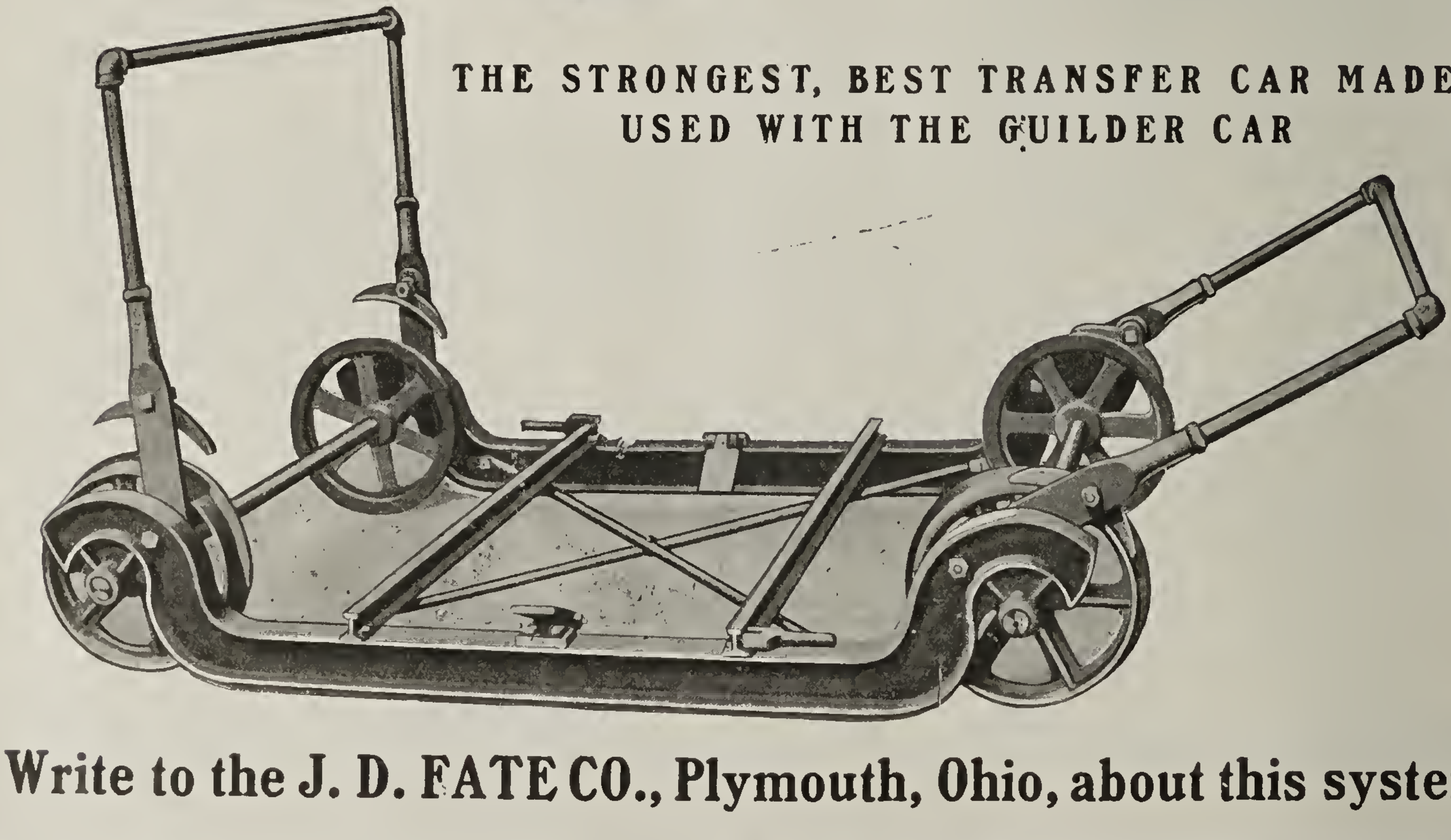
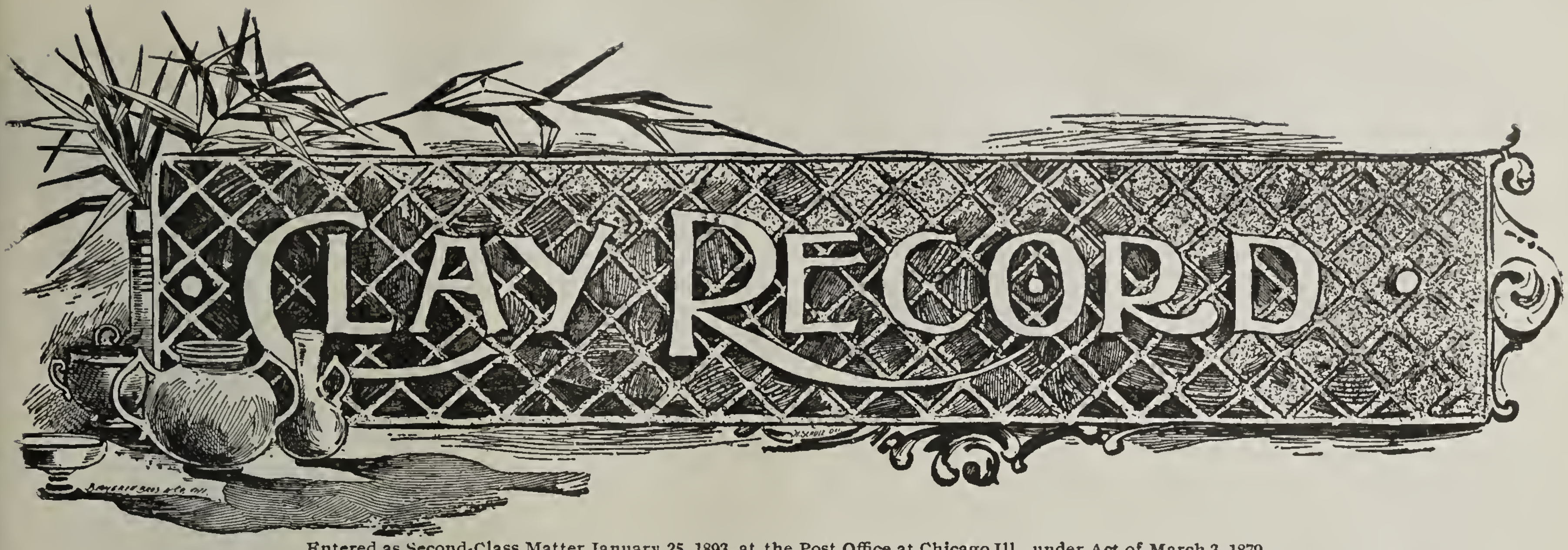


Write to the J. D. FATE CO., Plymouth, Ohio, about this system



Entered as Second-Class Matter January 25, 1893, at the Post Office at Chicago Ill., under Act of March 3, 1879

Vol. XXXIV. No. 12. CHCAGO, JUNE 30, 1909

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*BURNED CLAY IN THE CONSTRUCTION OF SMALL BUILDINGS

By Geo. B. Waite

Had Alexander or Caesar succeeded in conquering the whole world and bringing with them civilization and the best of government, their influences on posterity would have done no more good than the salutary results which have been wrought for the benefit of mankind through constructions made of burned clay.

How long burned clay products were developing to practically suit all building conditions need not take up our time now, but it was sufficiently long to be sure that at least the common brick with its three varying dimensions will stay with us for a long time to come.

It has been tested almost continuously from time immemorial by aspirants after improved constructions, and each so-called improvement has invariably dropped back step by step to the same idea and the same material, i. e., the clay brick, convenient in size with three varying dimensions.

The history of burned clay products is as interesting, if not more so, than most histories of other world-wide functions of civilization. Like the history of "God's chosen people," it has learned some lessons by trials and tribulations. By retrospection it has learned that some of its success is due to its early marriage.

True to nature, clay gave itself early in life in marriage to Miss Wood, the Queen of the Forest. Unconsciously, of course, it felt the need of a spouse having a strong and tenacious nature to do the duties incumbent on the keeper of the inside of the house; while he, with his fixed and stable manhood kept guard on the outside of the house, warding off all outside enemies and supporting the whole household.

Matchless was the measure of success of this new family, and their posterity moved to every clime and ruled in every civilized country in the world. Of course, boundless prosperity naturally brings laxity in the fixed habits which were instrumental in bringing success. Therefore, the proud descendants of the illustrious ancient family need not blush if a few family jars are referred to in their history, which only serves to season the otherwise monotonous repetition of successes. That sons and daughters in the lineage of this family should cause their rich fathers and mothers some little uneasiness at times is perhaps beneficial to the development for a higher plane, as corresponding troubles in any other family.

Some of the daughters surrounded with luxury flirted with young and egotistical huntsmen. Nature seemed to tell them that there was something lacking in them which the rude natures of these people could supply. Though the old people kept the best of watch on the girls, they succeeded in meeting the young men, and some fell deeply in love with them. Several likely girls hastily married into the Steel family, which did not cause nearly the friction as a few who married into a mongrel family called the Concrete Tribe.

As soon as the Steel boys once got inside the family grounds they seemed to be willing, and the old people put them to work at once. They were so marvelously strong that the old folks were secretly as much overjoyed at having them in the family as were their daughters made happy from the first meeting.

But it was different with the union with the Concrete Tribe. These boys did not seem to have a clear understanding of anything, though they talked, talked, talked!

It was hard to harbor and encourage the propagation of a posterity from a union like this—for it was not easy to predict what kind of a race it would make. While the whole Clay family loaded the Steel boys down with useless loads, and even tried to see how much they could carry, the boys only seemed to take it as a joke; they knew that in time the sagacity of their people could correct the misconceptions of the Clay family.

On the other hand, the Concrete boys took nothing humorously, but most seriously suggested that the old people ought to retire and give the place up to them. They even threatened the old folks, saying what their people would do to the whole Clay family if they did not get a fair show.

The Clays being quite busy people, paid little attention to these sons-in-law after the threats were made; so the Concrete boys, with the meager help of their tribe, started out independently to build homes for themselves and their families in their own way, about which they had read in certain books.

They started out dressed in their wedding suits, intending to only give orders to the serfs who were to do the work. With books in hand they first watched the picture, then the spot where the houses were to be erected. They were very boisterous at first, giving orders with much command and vehemence. They had not thought much of rations, as they reckoned that the houses would go up so quickly that living in the meantime would be easy. After a short period, they implored their wives to go over to the house of their father-in-law and quietly borrow a few necessaries, as it looked as though on account of unexpected delays through the short-

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* A paper read before the Twenty-third Annual Convention of the National Brick Manufacturers' Association, Rochester, N. Y., Feb. 1-6, 1909.

comings of the workmen, of course, the houses would not go up as quickly as expected. Following the record of one of them (which is typical of many), a sense of shame began to creep into his feelings on account of the boastings he had made to the elder Mr. Clay; but he continued to be game, and once more on Monday morning took his stand with his plan book in hand. With renewed assurance he commanded the serfs to raise the building. Finally one spoke out that it was no easy matter to start walls of a house this way, and dared to say that he believed the way of old Mr. Clay was much better. For this the man was promptly discharged, and commands to the rest were quickly given to immediately raise the house or they would reap a like fate. It was noticed by the workmen that the commands were given in a voice increasing each time in pitch, but weaker in tone. This encouraged the rest to occasionally talk back. One spoke up and said that the lumber was crooked and knotty, and it took most of the time hunting for a suitable piece for every special part of the forms, and that there were so many special things to be fitted around with the forms that he could not make any headway. Another said that he had an idea which would revolutionize concrete construction by putting up forms of iron; they would cost $25,000 for the first house, but if you wanted to build 25,000 houses just alike, it would be only $1.00 apiece, besides the carting storage, handling, interest, etc. All together, there were sixteen men engaged on form work who courageously spoke up; each was critic of the plans contained in the book, and each severely criticised the plans of all the others. The most intelligent of all who undertook to offer suggestions, was a handy man engaged in putting the forms together. He said all of those engaged on the forms were obliged to have seventy-five different kinds of tools, and it took almost all the time going from the tool boxes to their work, hunting for the right kind of tool to do the "good work" required.

After this the men took more freedom in expressing themselves, and this Concrete boy began to show outward signs of thinking.

Next day the lumberman came and said that as the stipulated time for the building to be finished had expired, he must be paid. Two days later a pugnacious looking man came around and said that he was the delegate for an organization of workmen, and that he had evidence that they were only paying one-half the wages that the Clays were paying.

This last phase brought the climax to his already discouraged feelings, and, having natural brilliancy in cases of emergency, he almost immediately began to read between the lines in his plan book, and soon came to the conclusion that he had not understood the real meaning of the "road to success" laid down in the book.

He visited his attorney and got counsel about the best way to form a company without being responsible for any personal acts. After going home that night, he spent a few moments in looking over his concrete picture album, and picked out among the steel tension bars some which had ridges called eyes, some which had projections called ears—although the eyes and ears were so nearly alike that no one but the inventors could tell the difference. So he seized the idea of inventing a bar having eyes and the ears alternate, and found a patent attorney who said this would solve the entire concrete problem, and that with this new idea there would be no further trouble in concrete construction. So they marked the innovation with "patent applied" and at once organized a stock company to handle the prospective business. Next day he started a new book on "Success in Concrete Construction," and "How to Succeed" in doing it by the use of the new *hypnotic reinforcing bar*.

Some length has been given to the history of this particular son-in-law of the Clays, because it is so similar to many who have met with "phenomenal success in concrete," independent of the Clays, their best friends.

Several of these young men, when they had discovered their mistakes, sent their wives around to carefully advance the suggestion at the dinner table of their old home that their husbands thought more of the Clays since starting in business for themselves, and that they would be very happy to visit them. Thus the reconciliation, friendship and prosperity which subsequently resulted from this sagacious move of the Concrete boys. Only a very few obstinate ones persisted in holding out until winter came on, and their wives had to go back to their parents to live, leaving them to their fates.

The sons-in-law who had returned to the happy home of the Clays were received with due appreciation, and were given a chance to show their ability in connection with the business interests of the united family. They were first introduced to their brothers-in-law, the Steels, who had worked their way right into the confidence of the Clays from the very date of their marriages. The Steels were well related before marriage to skilled engineers, and through that source much salutary advice had been given to the business conducted mutually by Messrs. Clay and Steel.

When the humiliated and reformed Concrete boys came home, they were at first given such duties around the buildings as Messrs. Clay and Steel could trust them with. They were advanced as fast as they clearly worked out their own way. As they grappled with the burdens of the business and exhibited especial capacities, they were appreciated by Messrs. Clay and Steel, and, finally, all became the closest of friends. The Concrete boys finally made a clean breast of their feelings, and acknowledged that they owed their business success to the Clays, to whom they were very grateful.

At the last anual meeting of the company, in which the three are now directors, a sort of love feast was held, in which all agreed that they had plenty of their duties to perform without encroaching on those of the others; that their interests, mutual and individual, were better conserved by continuing in harmony. It was agreed that the Clays were more especially adapted to guard and protect, enclose, divide and clothe the house, and that the Concretes and Steels were better inured to do the hard drudgery about the inside of the house.

The writer has recited the above story, believing that it is true, and, though the patience of the reader must have been taxed to the utmost, it is hoped he may be allowed to call attention to the interests of the united family above referred to in its future increase of business, which is awaiting it in the simple constructions for light buildings now being done mostly with wood.

If the cost of fireproof dwellings, barns, private garages, etc., can be shown to compare favorably with less desirable and perishable buildings, and having all other things equally satisfactory, then the demands for such buildings will increase in proportion to the information and education given the public.

The construction, besides being reasonable in price, must be so simple that local contractors or even handy mechanics of any kind can erect them with as much facility as they can erect the wooden building. The day is now here when this can be done, and it is time to show how to do it, that public interests may be advanced, and that manufacturers may reap the benefits that such service to the public merits.

To prepare the mind to look along the lines in which we can expect the most simple and cheap constructions for this class of buildings, we may do well to briefly review a few lessons taught from long experience in other buildings.

The young egotist is enthusiastic in trying to use concrete for everything. Among others things, he has tiered endless kinds of hollow concrete blocks for the enclosure walls. These blocks usually shock and disgust the ordinary man in their attempt to imitate stone. They are not accepted by most city ordinances as fireproof, nor do they give sufficient strength for carrying purposes. These blocks can not be laid into any wall from stock, as can brick. In fact, the only way that a concrete block can be made practical is to make it solid and get the size down to something like a clay brick, to be cut and fitted for any place as a clay brick is used. Now, if this is done it will be just about the same size as ordinary brick, and then it can neither compete with the clay brick in price nor in quality.

They have tried to overcome the objections to the cement blocks by making monolithic concrete walls. Without exception, all who have engaged with enthusiasm in the construction of monolithic concrete walls have paid dearly for their experiences, unless someone else has paid for them. They have attempted to erect two well-constructed wooden partitions, plumbed and stayed them, sometimes high up in the air. By the time the forms were down, it was found that the cost of the forms for the walls was so much more than that of the material entering into it that the latter is insignificant in comparison.

Neither is the increased cost the worst drawback to this form of construction. The "getting ready" and "getting over getting ready" gives such discouraging delays, especially in inclement weather, that the writer considers the concrete wall impractical for the ordinary building construction. Concrete walls are only practical where the bulk of concrete is of considerable magnitude and the centering is of comparative simplicity, such as with foundations, retaining walls, piers, and buttresses for railroad work, etc.

It is true that several contractors erect all parts of factory buildings, including the small panels under and above windows (the windows forming the entire fronts), but this is not for economy. The panels form so small a part that they consider it simpler to do it with the same workmen than to get separate mechanics.

The clay products are positively the undisputed masters of constructions for enclosures for buildings. The same arguments hold good in general for partitions, as for walls, if they are made rigid and reliable.

In the business buildings where a great quantity of brick is needed for strength and rigidity, and to form a bulwark against closely confined fires, the judgment of the engineer is apt to become "stuck fast" to old fixed rules of quantity of materials. When, however, he is designing a construction to compete with a light wooden building, he should go into a dark room to do his thinking, so that he can not see the commercial building. If he designs a fireproof building having only the surplus strength of a satisfactory wooden building, he is doing well. Remember that it is the province of the engineer to build safely, but at the same time economically. Anyone without engineering skill can build safely if you let him throw away all the materials he wishes.

In the first place, the light dwelling, barn or private garage is detached, and needs but little protection from the outside. To conceive the generic principles of construction for this class of buildings, so as to make it adaptable to simple small buildings, we should first think of the wooden skeleton or "balloon frame," which, after the outlines are established by good mechanics, are so readily finished up by quite ordinary workmen.

In copying after this idea of construction fireproof buildings, we should try to get a simple, light, but efficient outline frame, all of which shall be used for something all of the time. If we can accomplish this cheaply, the covering for the outside of the building need not be erected for strength, but only to keep out the elements, similar to the sheathing for the wooden building.

A fundamental principle to keep well in mind is that the cheapest way to carry a weight to the foundation is to let it drop straight down. The farther you carry it before letting it drop, the more the expenses. If you concentrate your loads in large centers before carrying them to the foundations, you will have to distribute them again when you get there. The more nearly you let them go from the floors distributed to that extent you will have them where wanted in the foundations.

Of course, it must be understood that to take the floor loads down through a skeleton frame, distributed as in a wooden "balloon frame," the fireproof supports would have to be very simple, so that two such supports of one-half size will cost substantially the same as one full sized. Each main floor carrier would best be made to rest directly upon the vertical support, and thus avoid transmission girders. The spacings will be determined by the conditions from a few to several feet apart, so as to avoid windows, etc., and make convenient, equal spacings.

Using material of the floor fireproofing as reinforcement to the steel frame, but a small percentage of the amount of steel formerly needed is required. Thus the steel members are sufficiently light to be erected by hand with the facility of the wood "balloon frame." When the outline frame is up, we have a skeleton similar to the human skeleton, which needs only the right kind of skin drawn over it to make it effective. The so-called skin could be of some form of burned clay products, as also the inside divisions and the greater part of the floor construction. Enough concrete can be advantageously used to go around the light steel frame to reinforce the uprights and floor tension members. With a construction of this kind, the great delay and expenses connected with erecting temporary skeletons, outlines and supports, such as is required with ordinary types of reinforced concrete, is done away with, and the prohibitive cost of the all-steel heavy frame is avoided.

To facilitate the work where desired, clay tile can be used for permanent centerings btween and around the steel members, with the concrete enclosing the steel inside of the tile centerings. In the floors, the concrete may be brought up over the top of the tile, forming the reinforced concrete floors.

The writer has been engaged for many years in steel and fireproof constructions for commercial buildings, and has used for the last few years, with great success, a combined light steel frame and concrete floor, with burned clay products for walls, partitions, etc.

BRICK PLANT WILL BE KEPT BUSY UNTIL OCTOBER SUPPLYING HOME DEMAND

The Lawrence (Kansas), Vitrified Brick & Tile Co., is delivering to paving contractors who are at work in Lawrence 50,000 brick a day to be used on the streets of the city that have been ordered paved by the city council. Teams and men are as busily engaged in this work as can be, and the brick is being distributed to all parts of the city.

The paving in Lawrence this year will require 5,000,000 brick to complete the contracts that have been let, and it is estimated that this will keep the brick plant here busy until along in October.

"We could have sold twice as many brick as we can possibly make," said Charlie Elwell, secretary and manager, "but we have always made it a point to take care of the Lawrence business, even when we could have gotten higher prices for our brick at other places. The Lawrence brick have a reputation that we are making every effort to maintain, and that is the occasion of the outside demand which we are unable to supply."

BIG IMPROVEMENT IN ROSETON YARDS

Improvements involving the outlay of a fortune have recently been made, and are still in progress, at the yards of the Rose Brick Co. in Roseton, N. Y. When they have been finished the most complete appliances in the world will be at hand for the making of brick at these yards. The improvements include the laying of a complete electric railway, the installing of several large and expensive electric shovels, and the building of a very complete power house, or sub-station, as it is called. Another great improvement is the leveling down of the road there, so that it will form part of what may well be termed a boulevard.

Formerly it was the custom on the Roseton yards to convey clay and sand to the machines by means of horses and carts. As necessity arose for conveying the material from points farther and farther distant on the yards, it caused much additional labor and expense. Still, there have been about 1,200,000,000 brick made under the old plan at Roseton since the late John C. Rose began to manufacture there in 1884.

Now this is all changed. Senator Rose has constructed between two and three miles of railroad of the narrow-gauge pattern, 3½ feet, with cars and electric locomotives. Sand and clay is conveyed in these cars from the banks where it is taken out direct to the pits. These pits were formerly made of wood, but now they are constructed of concrete and steel.

In order to dump the material in the pits, it became necessary to depress the latter, and this has been done. By this means the railroad is all constructed on level ground, it not being necessary to build a trestle. It was at first intended to construct a trestle for the road, but Senator Rose worked out the plan for the level road last winter, and the result is that the pits are placed on a level with the yard.

EQUIPMENT OF ROAD

There are twenty cars run on this new electric road. They are constructed of steel, and were made at the works of John Turl's Sons of Newburgh. These cars each hold about eight cart loads, and are specially designed so that the clay can be dumped out of them without sticking to the cars. The sides of the cars drop off and let the material all slide out. This saves handling. There are similar cars used on other brickyards, but they are small affairs, holding but one or two cart-loads of material.

On this large plant, however, it was found to be impossible to longer continue under the old plan, and electric cars drawn by electric locomotives of a special type are the result. The locomotives are of from 50 to 60 and are not likely to cause accidents. They will haul trains of five loaded cars up the grades. To operate the plant to its capacity, it is necessary to handle between 1,200 and 1,500 square yards of material a day (clay and sand). A square yard of clay weighs two tons. This means that there is a steady stream of from 2,500 and 3,000 tons of stuff (including the finished product) going through the yards every working day.

To run the cars on the electric railroad, three electric shovels made by the Thew Automatic Shovel Co. of Lorain, Ohio, have been put up on the yards. One man can run each of them, as against three on a steam shovel. It is estimated that these shovels will handle all the material required, sand and clay, in six hours each day. These electric shovels are the first of the kind used in the east. It will be necessary to run about seventy-five train-loads of clay, etc., a day, and trains will be running on a five-minute headway, before the season is over.

TAPPING NEW CLAY BANK

The Rose Brick Co. is not only working out the old clay bank, but is also tapping a new bank near the Roseton schoolhouse. While the new clay bank is being tapped, arrangements have been made with the Newburgh Town Board to take out free of cost the old grade on this road, reducing it from a 37 per cent. grade to less than a 7 per cent. grade. This will be of great benefit to the town and to everybody who wants to use the road. The heavy traffic will now be removed from this highway. A dressing of cracked stone is to be put on the road, after its grade has been reduced, with a top coating of gravel. The road will then be rolled down, and will become a part of what may be termed a boulevard.

Power for the electric road is secured from High Falls, under an arangement with the Newburgh Light, Heat and Power Co. It is brought down at 13,000 volts and transformed by three phases, by means of a motor generator set, and is reduced to 2,300 volts. The sub-station, as it is termed, is pronounced by expert electricians who have come from the surrounding country to see it, to be a model. Others are now being designed, on the same general plan.

Naylor Bros. of Peekskill, with Joseph D. Cite as constructing engineer, Harper & Jova of Newburgh as civil engineers, and Joseph Spino of Fishkill-on-the-Hudson, a railroad engineer, were the general contractors for the work at the Roseton yards.

SAVE POWER AND LABOR

It is confidently expected that these improvements will mean a saving of 100 horses and the labor of from 150 to 200 men, and should reduce the cost of production between 25 and 30 per cent. (a conservative estimate).

It may be added that the new clay bank now being tapped is expected to last for seventy-five years with a production of about 100,000,000 brick. For the electric road 40,000 wooden ties were used. They were made from wood taken from a piece of land purchased by the Rose Brick Co. for the purpose. This electric road goes through a tunnel under a new bridge built by the company between the property of the Rose Brick Co. and that of the Jovas adjoining. This is near the new clay bank where the great improvement to the highway is being effected.

Incidentally it may be remarked that there is getting to be a great deal of tone about the boarding houses for the help at the Roseton brickyards. In illustration of this fact, it may be stated that on the front of each of the buildings, on a sign board, is the name of some well known metropolitan hotel. For instance, they are houses thus named after the St. Regis, the Waldorf-Astoria, the Hotel Astor, etc. Roseton ceased to be called "Mud Hole' some years ago. At the fine brick school-house at Roseton there are no less than six teachers employed. There is also a fine church building, a club-house, a public hall, etc.

WILL INSPECT THE MAKING OF BRICK

The city of Kingston, N. Y., has employed William A. Aiken, vice-president of the Henry L. Spackman Engineering Company, of Philadelphia, to watch the manufacture of brick at the Catskill plant, Mr. Aiken will make tests of all brick before they are shipped to Kingston. He will make about fifty tests in all. Between times, when they are not burning bricks at Catskill, Mr. Aiken will be in Kingston making inspections as carried on by the city engineer. Reports of all inspections will be submitted to Mr. Codwise for his approval.

MR. ARMSTRONG GOES TO CHICAGO

A. J. Armstrong expects to leave Ft. Dodge, Iowa, in a few days for his future home in Chicago. Mr. Armstrong has been associated for the past few years with the Plymouth Gypsum and Clay Products companies of Ft. Dodge. Mr. Armstrong will have charge of the business of these companies in the state of Illinois and will have his headquarters in Chicago. The many friends of Mr. and Mrs. Armstrong in this city will be sorry to hear of their intention to leave.

THE WATSONTOWN BRICK AND CLAY PRODUCTS COMPANY PLANT

No part of Pennsylvania can better boast of a high class brick manufacturing plant than can be found at Watsontown, in Northumberland County, the property is owned by the Watsontown Brick & Clay Products Company. It was organized by mostly local capitalists with $100,000 capital stock. The officers of the company are as follows—President, F. E. Kirk of Watsontown, Vice President, M. A. Berger of Watsontown, Secretary, J. C. Fowler, Treasurer, W. A. Nicely, and General Superintendent, Samuel G. Davis. The officers together with C. M. Wagner constitute the board of directors. All of Watsontown, Pa.

The plant was built during the Summer of 1908, and completed in the fall and has been running successfully since the first of the year turning out a first class quality of paving brick. A visitor at the plant last week was informed that the company has orders on their books for four million paving brick, and had inquiries for several more millions. It has proven to be a very successful plant and has a very bright future.

Capacity Fifty Thousand Brick Per Day

The plant when fully constructed will be the largest industry in the thriving city of Watsontown. It was constructed under the watchful eye of Thomas M. Wilson of The Wilson Kiln and Dryer Company of Philadelphia, Pa. It is equipped with the latest improved Wilson square down draft brick kilns and hot air tunnel dryers. The machinery used is the largest size wire cut brick machine manufactured by E. M. Freese & Company of Galion, Ohio, and a Four Mould special Berg Dry Press made by the Anderson Foundry & Machine Works at Anderson, Ind. Special Dry Pans made by the Means Foundry & Machine Company at Steubenville, Ohio, was installed. A 200 inch fan made by the Massachusetts Fan Company, is installed in the drying apparatus, the entire machinery is operated by a 400 horse power Corliss Engine.

The illustration shows a cut of the plant with several kilns under construction; as soon as they are finished the capacity of the plant will be 100,000 brick daily.

Fred H. Chapin has been made 3rd vice-president of the Hydraulic Press Brick Co., and to have charge of the Ohio division of the company with headquarters at Cleveland.

FIRE RESISTIVE PROPERTIES OF VARIOUS BUILDING MATERIALS

TESTS BY GEOLOGICAL SURVEY.

The United States Geological Survey has undertaken to make a series of comprehensive tests for the purpose of determining the fire-resistive properties and rates of heat conductivity of various building materials and the comparative efficiency of different methods of fireproofing, the investigations having the further object of lessening the liability of loss by fire in government buildings and reducing their cost through more efficient methods of construction.

As a preliminary part of this series, tests of thirty panels constructed of various building materials were made by the Survey at the Underwriters' Laboratories, Chicago, to determine the effect of fire and subsequent quenching with water on mortar building blocks made of river and slag sands; common, hydraulic-pressed, and sand-lime brick; gravel, cinder, limestone, and granite concrete; glazed building and partition terra-cotta tile; and limestone, sandstone, granite, and marble building stone. The mortar building blocks and the concrete were made in the structural-materials testing laboratories of the Survey; the other materials, except some of the common brick, were obtained in the open market in Chicago, Ill.

The materials were subjected to the direct application of heat for five hours and were then, except in five panels, immediately quenched with water. Wherever possible tests were made to determine the compressive strength of the materials after this treatment. Temperatures were observed at intervals, and the behavior of the materials during the test and the condition of their surfaces before and after the heating and quenching were noted. Photographs of the panels were taken to show the effect of the tests.

The tests of the different materials were carried on under conditions as nearly identical as possible, but there was some unavoidable variation in the conditions. The furnace was in almost constant use by the Underwriters' Laboratories, and it was necessary to arrange the tests so as not to interfere with the regular work of those laboratories. It was also necessary to make half of the tests in winter and the other half in summer, and many of the building blocks used in the first tests were subjected to freezing weather just prior to testing. The results of the tests are presented in a report by Richard L. Humphrey, which the Geological Survey has just published as Bulletin 370. Although the tests were conducted primarily for the purpose of obtaining information essential to the Government, it is believed that the results will prove to be of much importance to the general public. Heretofore fire tests of building materials have been made at random, and scarcely any two tests have been comparable. The results of the Survey tests are not critically analyzed in the bulletin, although a few of the more important features are pointed out. They are presented merely as preliminary data regarding the relative fire-resistive qualities of the building materials tested.

TEXAS CLAYS EXHIBITED AT WHITE HOUSE

Washington, June 17.—There was an interesting display of Texas kaolin products at the White House this morning when Representative Garner opened a box received from J. H. Delaney, postmaster of Leaky, Edwards County. The box contained besides an egg made of Edwards County kaolin, and sent as a souvenir for President Taft, an ink well and a penholder wrought out of the same material. The president manifested his appreciation of the remembrance by showing the articles to several cabinet members who happened to be present and by speculating on the possibilities of the Texas kaolin deposits like a promoter.

ADVERTISING FOR THE CLAY TRADE*

It is a pleasure to have this privilege of addressing the National Association of Machine Manufacturers. As an advertising man I have had you all in mind frequently; not with any animosity I assure you, but with that unbounded exuberance of brotherly love which inspires a fellow to get the best of the other ninety and nine in an advertising campaign.

There is scarcely a member of the Association who has not awakened in our advertising department a covetous feeling now and then, a sort of selfish wish that we had thought of the other fellow's idea first, and the natural determination to "lick him to a frazzle" next time. To my mind a good advertisement is always a pleasure to behold, a bigger pleasure if it is our own, but still a pleasure even though it's the other fellow's. Those of you who expect to hear from me specific directions as to the short road to successful advertising, may as well go to sleep. Mr. Penfield pays me seven-fifty a week to give The American Clay Machinery Co. the exclusive use of what I know about advertising, and to give away all the secrets of the trade to his competitors would be like obtaining money under false pretenses. Then, too, I might be compelled to look for a new job, and with evidences of the late stringency still apparent in my crimped bank account, it behooves me to remember that you might feel hurt if I attempted to tell you wherein your advertising could be improved or presumed to know more about advertising than your own advertising man. There are, however, points where the interests of the members of this association are mutual in an advertising way, and in a few brief observations I hope to touch upon one or two of them.

BENEFITS TO BE DERIVED.

There is no question as to the benefits to be derived from advertising, but the question as to what class of advertising is most beneficial and as to what should be eliminated is a serious one, and a problem which not alone worries the advertising man, but is equally interesting to the man who pays the bills.

There is no disputing the fact that much of the advertising that is done is not of sufficient benefit to justify the expense. It brings results, direct or indirect, but whether there is enough business developed to make it advisable is a serious problem.

As a general proposition, that advertising which is most direct pays the highest return; while the general advertising is much less profitable, the ratio of results being governed by the proportion of the general reading public that is interested in the article advertised.

It is probable that the most profitable results would not be secured by advertising clay-working machinery and appliances in the literary magazines of today, because of the small per cent of readers who would be interested in the machines advertised in proportion to the amount charged for the advertising. Yet the literary magazines would produce results, and any lack of replies could not be attributed to any inferiority on the part of the magazine as a medium for general advertising. In the same way every bit of advertising must be considered from the result-producing standpoint, and from this point alone must be judged as a good or poor investment.

CONVENTION PUBLICITY.

This brings forward a question which the members of this association might carefully consider with profit to themselves. It has been the custom for some years for the machine men to give away souvenirs at the conventions. This is unquestionably good advertising, but whether the results are worth the increasing cost is an entirely different matter.

Convention souvenirs may act as a detraction from the subject matter under discussion at the sessions and lead the attendants to neglect the sessions for the booths and headquarters where souvenirs are dispensed. Whether or not it would be better to cut out the souvenirs is a matter which might be discussed by the Manufacturers' Association, but if it will result in the general good of the clay manufacturer it should be done.

ADVERTISING AN ANCIENT ART.

Advertising is not a new thing. Away back in the Garden of Eden we find it. Eve advertised the excellence of the apple to Adam—and he bit.

Millions of people have been biting at good advertising ever since. That bit of advertising on the part of Eve is reputed to have changed the entire social, moral and religious complexion of the world.

Note what a power there is in a bit of advertising. Note, too, that Adam and Eve advertised to their friends and neighbors that it was really the fault of the serpent, and down the cycles of time, to the present day, there has come an almost universal effort to get even with the snake, and every heel is raised against this humble member of the invertebrate family though it is really most useful.

We find again the power of advertising in the much heralded and widely advertised flood as put on by Noah. At that time there were few believers in advertising, but the fellows who had the faith bought passes on the ark and lived to say "I told you so" and to extol the merits of the scenic route, the skipper and his crew; while the others who failed to read the papers, or looked upon the advertised flood as a fake on the part of the yellow journals, went into "liquidation" and were never heard of again. This ought to prove to you that you should advertise whether the other fellows believe it or not. Also that you ought to believe what you see advertised. We don't have such floods nowadays, but we do get submerged occasionally by panics, and when you see it advertised that a prosperity special has been chartered to carry everyone to affluence, you must'nt sit around in your tent at the foot of Mount Aarat and sulk. "Come out of it." Get aboard. Shovel a little coal under the boiler and get up some additional steam. Grease the axles with a bit of cash and push the special on with a little faith, toward a speedy voyage.

TRADE PAPERS ENTITLED TO PATRONAGE.

Not long ago The American Clay Machinery Co. received the prospectus of an eastern association of manufacturers who had a big idea. It was to save expense to the members of their association. One of the big talking points of the circular was that they would save at least half of the advertising expense because each member would agree to cut off half of his advertising. That idea looked good on paper from a saving point of view, but was it practical?

Could we cut off a half of our advertising without ourselves being the sufferers?

The trade papers are built on a basis of their receipts. Suppose we withdrew from our papers a half of their income by cutting off a half of their advertising. Wouldn't that make it necessary for the managers of the papers to make a cut in the quantity and quality of those publications?

Could a paper be made as interesting under such a cut, and would the subscribers continue to take a paper which showed such necessarily apparent retrogression?

It is the circulation we are interested in, nothing more and nothing less. We want our advertising to reach the largest possible number of interested readers, and, in withdrawing our support from the trade papers, we would only be cutting off the result to be attained from our advertising.

The trade papers are entitled to a reasonable amount of patronage because they represent us before the trade and we should have a sense of pride in a creditable representation. Possibly we do not need four or eight pages each issue, but we should give them a steady income of a fixed number of their cloth accordingly. It would be better to be overly loyal in our support rather than to be too parsimonious.

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*By F. L. Hopley, Advertising Manager for the American Clay Machinery Co.

Before coming to this convention it was my pleasure to look over the convention numbers of our trade papers, and I was imbued with a feeling of pride not alone for the papers themselves and the advertisers, but for the trade which makes such excellent editions possible.

CLAY TRADE PRACTICALLY IN INFANCY.

The clay trade is practically in its infancy. In the past 25 years there has been no development equal to it excepting in electricity. That development will continue, if it is properly pushed, because of the growing scarcity of wood for building purposes and the growing horror of our fire record. Neither the available timber supply nor the supply of cash in this country, will permit of the people of the United States burning up $600,000,000 worth of buildings a year as has been done in the past. The country must and will look for a more nearly fireproof construction. That can best be attained through the use of the very best material for the purpose—burned clay products. But the builders and the public and not the clay trade will draft the specifications. There will be two competitors for public favor. One will be clay and the other cement. Already the battle is on and it is up to the clay interests to see that burned clay takes the position and receives the recognition to which it is entitled.

Here is an opportunity for good advertising open to the Machinery Association, in which they should combine with the clay workers and other kindred interests in promoting to the utmost of their ability the merits of burned clay products. The cement organization of the country has some of the most able advertising men engaged in a campaign for the promotion of cement. Hundreds of thousands of dollars are being spent in the cement campaign, and much of the advertising works to the detriment of clay products.

The general public is led to believe that cement is a "cure-all" and that it surpasses every other material for every class of building and every kind of construction.

There is a large and useful field for cement, even though it is confined to the construction and uses for which it is superior, but there is an increasing tendency for cement to overlap the field of burned clay products and it is of vital importance that the clay manufacturing interests keep cement in its proper field. This can only be done by judicious and persistent advertising. A few thousand dollars for this campaign would only be a drop, as such a campaign as is required will cost many thousands of dollars and the longer it is delayed the more it will cost.

While the public learns dearly in every concrete failure, yet they do not know that concrete should not have been used at all and that brick would have prevented the failure.

The movement of the National Brick Manufacturing Association toward an advertising campaign of this kind is a good beginning, but should be backed up by generous subscriptions from every interest dependent upon the clay trade for business.

Our trade papers are doing even more than their share in this campaign, but they are preaching to pews filled with those who are already of the faith. The same articles appearing in our trade papers should be supplemented with a few, more gentle, doses and should be published broadcast in every paper in the land that can be begged, bribed or bought into giving them publicity.

Burned clay products will never occupy the position to which they are entitled until a united and vigorous campaign of education is carried out. It is true clay plants will continue to be operated, but the volume of business will be many times as great when the careless, thoughtless and indifferent public is made to understand that, as a building material, burned clay products rule supreme, that they are in most cases without an equal and in every case without a superior.

MONTELLO PLANTS TO BE OPERATED

Owing to responses made by about 80 per cent. of the stockholders of the Montello holdings, requesting the Board of Directors to make brick without any further delay as they were tired of prolonged litigation, the Board has taken steps to put the plants into operation.

The Perkiomen plant is the first to receive attention. Brick will again be turned out within three weeks, after a shutdown of almost two years, due to the financial troubles encountered at that time, throwing the Montello Brick Works and the U. S. Brick companies into bankruptcy.

Lambert A. Rehr, who was recently chosen as general manager with authority to start operations, has a force of men at work at the plant.

The clay pits were found badly flooded. As it would require about three weeks at considerable expense to pump them dry, it was decided to lay a drain to the Perkiomen which will save trouble of the same kind in the future. In the meantime, all machinery is being overhauled and kilns repaired where necessary.

When this plant is in operation the Wyomissing plant will receive attention and the Oaks plant will follow.

The Stockholders' Committee which is considering plans to provide for the acquisition of the Oaks plant in order to hold it for the Montello Co., is holding frequent meetings. The entire matter is expected to be adjusted within a very short time.

Owing to the revival in the building operations, there is an excellent market for brick which the Directors wish to take advantage of.

The company has opened an office in a single room on the fifth floor of the Colonial Trust Building, Reading, Pa., which is in charge of Howard L. Boas as Acting Secretary.

Alleging that he received but an average of $3.46 a day for his services as trustee of the Montello Brick Works, which he regards as entirely insufficient, Edward D. Trexler filed a claim with Referee Bertolet, asking for $10 a day for extra work performed during the 435 days of his administration. The bill of extras is for preserving and taking care of the plants.

This claim, although not submitted in detailed form, is in addition to the one per cent. on the total of the funds handled by the trustee, which is allowed him by law.

KANSAS BRICK MAKERS PAY OLD SCHEDULE

W. H. Francis, manager of the Cherryvale yard of the Coffeyville Brick Co., announced that beginning July 1, that company will pay the schedule of wages in effect before the panic.

When the financial and industrial depression was on this company, like practically every other industrial concern in the field, ordered a horizontal reduction of 10 per cent. in wages paid its employes. This announcement restores the former scale and becomes effective July 1.

W. H. Withington of the Union Brick Co., stated that his company had already restored the scale of 1907. This action has been gradual and but recently applied to all of the men.

F. E. Shumard of the Cherryvale Brick Co., said they were paying the men by "piece work" and that the scale was in some instances as high as ever and in others a trifle lower than the high tide.

J. N. Strickler of the Federal Betterment Co., announced that the wages he is paying is the same as before the panic. He reports business good and work for all the men who may come.

The resumption of the scale paid in 1907 by Cherryvale factories affects approximately 800 men and the increased wages will be of material benefit to that city's prosperity.

PROMISES TO REVOLUTIONIZE THE MAKING OF BRICK

It is now claimed the brick making industry of this country will be revolutionized. A secret chemical process for extending the life and service of an ordinary fire brick under extreme degrees of heat and friction 100 per cent and over has just been demonstrated by local tests. A charter has been secured and The Refractory Fire Brick Company, of Washington, Pa., is now a reality with offices at 326 Washington Trust building. A coal and fire clay property has been purchased near Connellsville, and the first plant will be erected there. Later it is probable that a plant will be established at Washington and at other points throughout the country.

The Refractory Fire Brick Company controls the exclusive use in this and several adjoining states of the above mentioned process. Tests have been made in Ohio, West Virginia and at other places and are now being made in Washington, Pittsburg and elsewhere. The result of the tests made so far show that an ordinary fire brick treated with this process will stand at least 4,000 degrees of heat. Successful tests have been made in revolving cement kilns, cupolas, furnaces, etc. The process can be applied to any fire brick after they are made.

The secret process which is represented by former Judge J. L. White, of New York City, is controlled in the territory above mentioned by the local company. Mr. White has been in Washington for several weeks, making the preliminary arrangements for incorporating this company and putting in the tests. The process has been tried out by the German government and approved by its experts.

The company's property near Connellsville is located upon the railroad and consists of 72 acres of Lower Freeport coal and this is underlaid with a fine vein of flint fire clay. It is the plan of the company to erect thereon an up-to-date plant with a daily capacity of 25,000 fire brick and other clay specialties which are subject to extreme degrees of heat. These will be treated with this process as manufactured.

◆

INSPECTOR MANDAMUSED FOR BRICK YARD PERMIT

J. Herman Kittenbrink will make City Building Inspector C. H. Withnell, of Omaha, Neb., show cause why he should not issue a permit for a brickyard which Kittenbrink wishes to build. A petition for a writ of mandamus has been filed in the district court and an ex parte order secured from Judge Troup, directing that Withnell issue the permit or show why he should not.

Withnell refused Kittenbrink a permit June 8, when formal application was made. He was guided by a city ordinance passed just before election, forbidding the erection of any more brickyards. Residents of the neighborhood used all the influence they could bring to bear on the old council, which then put the ordinance through.

Kittenbrink desires to build his kilns out on Fifty-second street.

◆

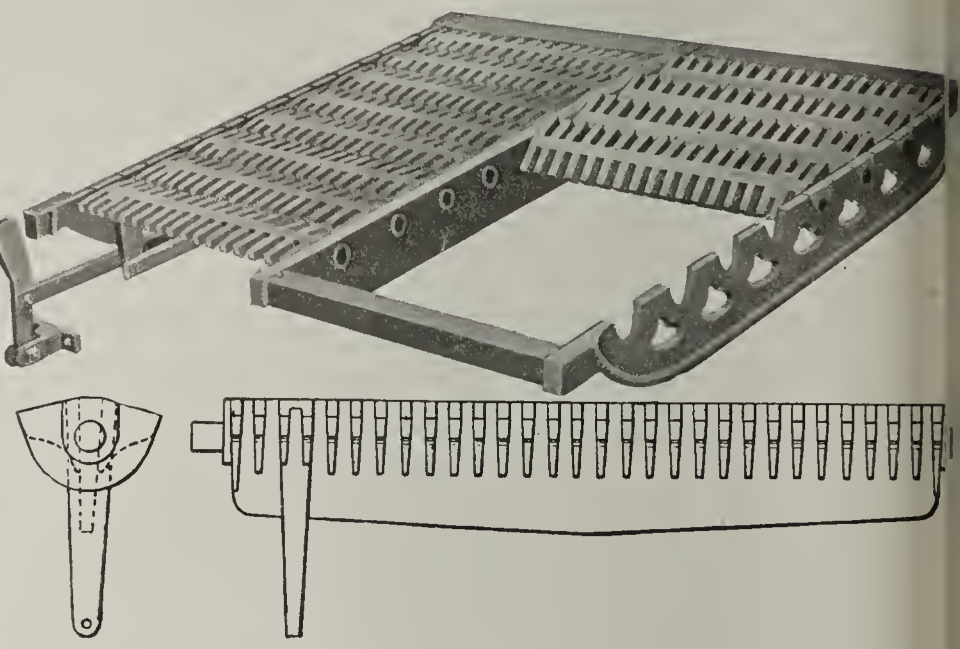
G. H. Fairchild, of Sioux City, Iowa, and G. H. Fairchild, of Minneapolis, have purchased interests in the Cherry Red Pressed Brick Co., Correctionville, Iowa, and the plant is to be operated in conjunction with the two plants owned by the Fairchilds at Sioux City.

THE TIP TOP SHAKING GRATE

The word tip top in connection with the word shaking grate that is manufactured by the U. S. Rocking Grate Bar Co., 77 Jackson Boul., Chicago, has two meanings. The first is that it is a tip top good grate, a splendid one that will do its work well and the other meaning is that the top of the grate tips back and forth or up and down so that the clinkers can easily free themselves.

The illustration shows a top side and end view of the tip top shaking grate. It increases the efficiency of the boiler, maintains a uniform supply of steam, adds to the life of the boiler, shakes ashes and dumps clinkers, saves repairs and shutdowns, is simple, effective and durable. Is easy to install, is easy to operate, has 50 per cent. of air space, saves the boiler, saves the fireman and saves coal and money.

With the Tip Top Shaking Grates the fire is cleaned by a stroke or two of the shaking lever without the use of pokers or slice-bars, and without opening the fire doors.



Tip Top Shaking Grate

With the old style of flat bars, when it is necessary to clean the fire, your fireman throws open the fire doors and gets busy with poker and slice-bar. In rushes the cold air, over the fire instead of under it where it should be, and down goes your steam pressure, that cost you money to get up. The cold air also strikes the hot crown sheet, rapidly cooling it, and often doing great damage to your boiler, entailing costly repairs, and a shut-down that you can ill afford. By putting in the Tip Top Shaking Grate you can cut down your coal bills, your labor bills, and your repair bills, adding the amount saved to your annual dividends.

Examine the cut of the Tip Top Shaking Grate and note the even distribution of metal and air space.

Combustion is the union of oxygen in the air with the carbon in the coal, and therefore free circulation of air is absolutely essential to perfect combustion. The Tip Top Shaking Grate with its 50 per cent. of air space allows this free circulation.

This company has been building grates for 20 years, have had a wide experience in the economical burning of all kinds of fuel, and know the requirements. Write to them if you wish to learn more.

PACIFIC COAST NEWS ITEMS

The local brick market continues to be fairly active, especially for pressed and all varieties of face brick. Common brick is also being sold in large quantities but there is a feeling that there is grave danger of over-production and already it is being asserted that the steady price that has been maintained for the past three or four months is being shaded by some of the concerns that have just started up their plants and desire to make a bid for business. Practically every brick plant in the San Francisco territory turning out common brick is now operating and some of them are operating to their full capacity. Just at present there is not much surplus as many of the plants had been closed for a long time and stocks had been reduced to small proportions but with the plants operating as they are at the present time it will not be long before some firms will be finding a large amount of brick on hand and will be cutting rates in order to get rid of their holdings. While no specific instances can be sighted where brick has changed hands lately for less than $10 it is rumored among the trade that such has been the case.

In San Francisco there is considerable building going on but operations are confined to small structures almost entirely. There is not a building now in course of construction over ten stories in height and most of them range around five and six stories. Some municipal work is being done, notably on the new Hall of Justice, and the Government is also making some very extensive improvements in this vicinity that call for considerable brick, but as regards private work the volume of permits and contracts have fallen off lately. Some large structures are being planned, however, and the demand is not expected to diminish before the rainy season sets in. Just what will be done in reference to the building of a new City Hall has not been decided but the matter will be submitted to the vote of the people soon. It is proposed to select a new site and form a civic center according to the plans prepared for the City by Architect Burnham of Chicago.

One branch of the brick making industry that is growing rapidly on the Coast is the making of paving bricks. In San Francisco the use of these on the streets is being tested but on a limited scale only and but few are being sold here. In the Northwest, however, their use has become quite common and the plants now in operation there are not able to supply the demand. As a result at the present time Los Angeles is shipping paving bricks to that section of the country by the millions. At Seattle, and in the vicinity the plants are turning out 30,000,000 street-paving bricks a year, but they are not able to supply the demand. The Los Angeles Pressed Brick Company is now busy shipping an order of 1,500,000 paving bricks to the city of Portland, Ore. The buyers furnish the crates and do the crating and it is estimated that by the time the bricks are delivered in Portland they cost from $12 to $14 a thousand more than they do in Los Angeles. They are shipped from the plant to the long wharf at Santa Monica and there transferred to ship and it has been found advisable to crate them. The city of Tacoma is inquiring for paving bricks and desires 100,000 at once and is negotiating for the purchase of 500,000 a month during the whole of the next year. The southern California paving brick is a superior article and the northern cities seem willing to pay the price even though transportation charges are quite heavy.

Twenty thousand dollars damages and the return of certain land contracts and notes or $50,000 additional damages are prayed for in a suit filed by J. V. Chown in Oakland, recently against W. A. Houts and the Fire Brick & Tile Co. Chown claims that in 1906, he entered into a verbal partnership arrangement with Houts, by which Houts was to furnish capital, Chown experience, work and claybearing lands in Calaveras county for the manufacture of brick and tile. Chown had the lands under contract. Houts later told Chown that he did not have sufficient capital to carry forward the work, so the complaint reads, and then it was arranged that a company should be formed. Chown claims to have put up two notes for $5,000 each and the rights to the Caliveras county lands under an agreement that the notes were to be discounted, and Houts was to make other arrangements to have the work commenced. Instead of beginning work, Chown alleges that things were allowed to remain dormant, he being prevented from going ahead on his own account through having transferred his rights to the land. As a result he claims to have suffered $20,000 damages, and claims that if he cannot recover his contracts on the land he will suffer further damage to the amount of $50,000. He also wants the $10,000 in notes cancelled.

The new kiln of the Carquinez Brick & Tile Co., near Benecia, Cal., has been completed as well as the new drier. The output of the plant at present is just about equal to the demand.

F. W. Beardslee has resigned from the office of President of the Vallejo Brick & Tile Co. Consolidated and has taken over the selling end of the business and will market the entire output. S. J. Smith, an Oakland man has been made president of the concern. Nine kilns will be in operation within a short time and it is planned to work these to their full capacity for the balance of the year. Thirty-five kilns are planned for the plant but no more will be added until next spring. It is intended to commence the manufacture of firebrick at this plant as soon as the paving brick plant is well under way. An export business has already commenced and a shipment has just been made to the Island of Guam.

The Pacific Terra Cotta & Clay Co., has been incorporated in San Francisco by H. C. Norton, T. F. Obermeyer, L. E. Burke, H. G. McKannay and W. H. McKillican. The capital stock is placed at $1,000,000.

J. A. Bauer of Kentucky, has purchased land near Los Angeles and announces that he will erect a plant for the manufacture of glazed earthenware. He will also make electric insulators. Four carloads of machinery has arrived for the plant.

The Northwesten Brick & Tile Co., has been incorporated at Dreary, Ida., by J. A. Harsh, H. D. Warren, H. P. Henry, A. J. King and F. C. Gowan. A fire and repress brick plant to cost $15,000 will be erected at once and will be operated by A. J. King of Palouse.

The Alabama Fire Brick Manufacturing Company was incorporated at Phoenix, Ariz., recently with a capital stock of $50,000.

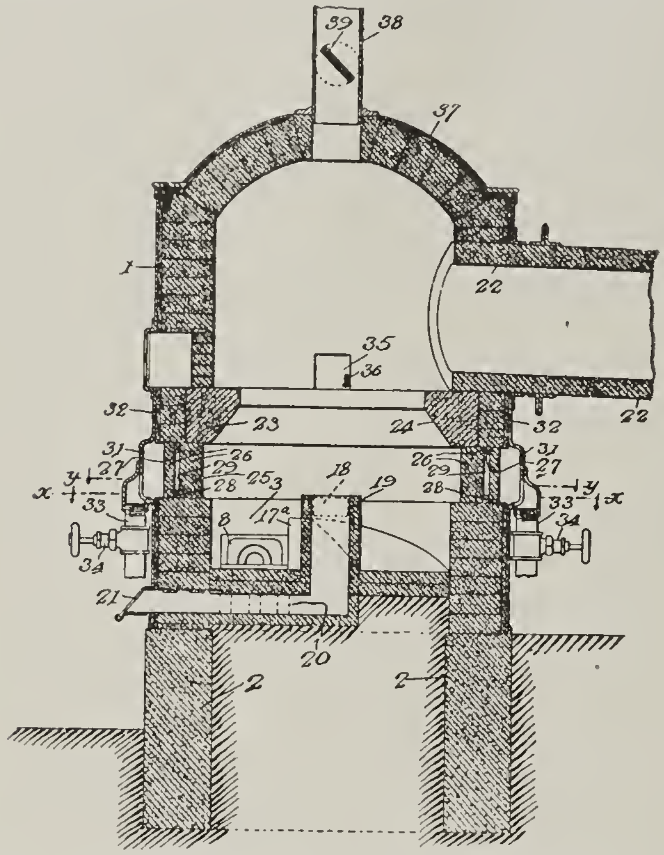
The Perry Mfg. Co., Perryopolis, Pa., are increasing the capacity of their plant by building several additional Wilson kilns and by adding several tunnels to their waste heat dryer. This will give them a daily capacity of 75,000 brick. The plant was designed and built by the Wilson Kiln & Dryer Co., about four years ago.

NEW INVENTIONS THAT ARE OF INTEREST TO THE CLAY MANUFACTURER

These new inventions are those that are especially of interest to anyone engaged in the line of building materials and their manufacture, or machinery to make them.

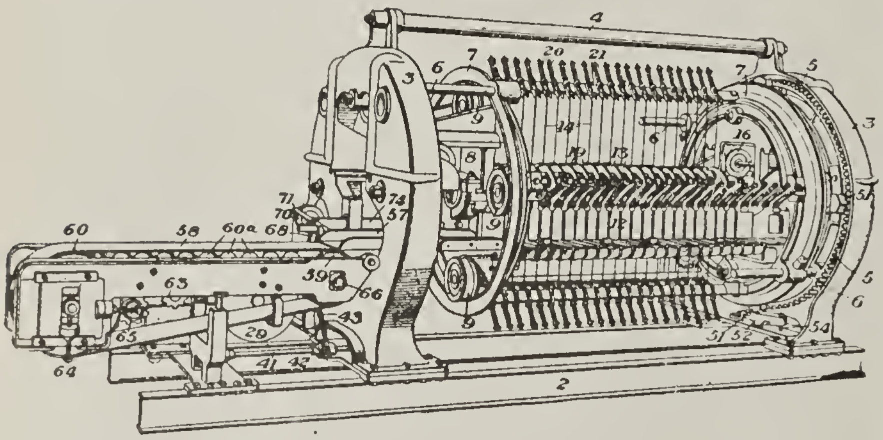
916,658. Drier-Furnace. Clayton O. Billow and Elmer E. Billow, Chicago, Ill. Filed May 25, 1908. Serial No. 434,906.

A furnace of the character described comprising a body portion having an air inlet, and an air outlet above said air inlet, a combustion chamber adjacent to said air inlet, and means located between said inlet and sair outlet for tempering the air which is heated in said combustion chamber before it passes through said outlet.



A furnace of the character described comprising a body portion, an air inlet centrally arranged in said body portion near the bottom thereof, a combustion chamber surrounding said air inlet, an air outlet in the upper part of said body portion, means for tempering the air as it passes from said inlet to said outlet, and means located between said air inlet and said air outlet for causing the products of combustion to mix with said air before it passes through said outlet.

917,630. Brick-Cutting Machine. John O. Ludlam and Charles F. Bonnot, Canton, Ohio, assignors to The Bonnot Company, Canton, Ohio,

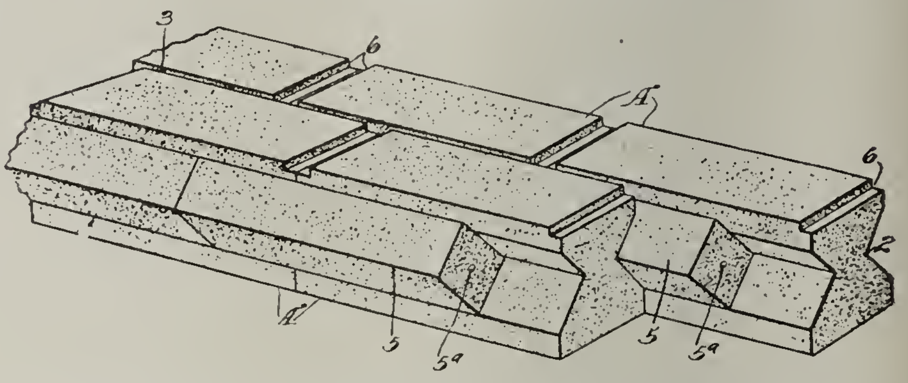


In a brick-cutting machine, stationary end frames or heads, annular gears housed therein, a reciprocating cutter frame supported by and between said heads, and rotating connections between the gears and the cutting frame; substantially as described.

In a brick-cutting machine, stationary end heads, gears in said heads, means for actuating the gears, driving pins carried by the gears, a reciprocating cutting frame having driving engagement with the pins, and tracks for said frame carried by the heads; substantially as described.

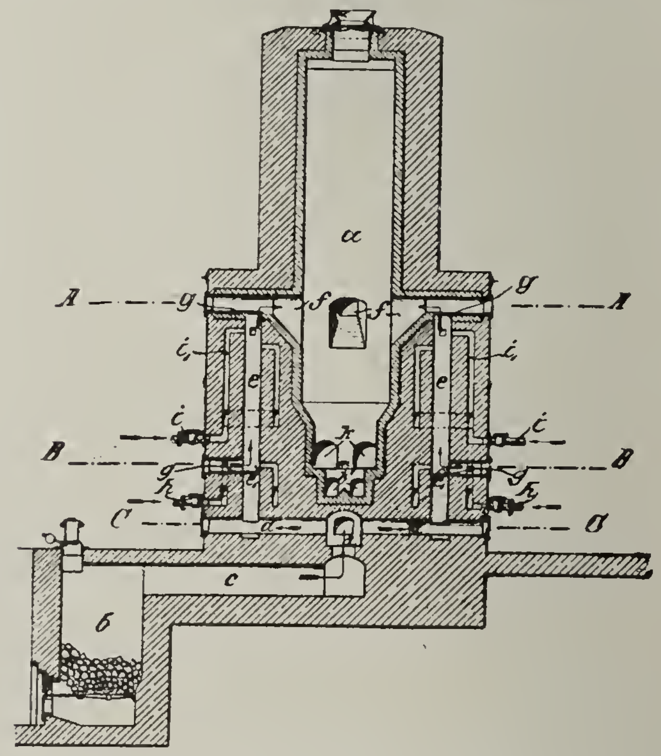
916,693. Pavement. William H. Fulcher, Oakland, Cal. Filed Aug. 5, 1907. Serial No. 387,189.

A pavement consisting of molded blocks having a length equal to a plurality of diameters, and having V-shaped channels in their long sides, said blocks being laid to break joints at the ends, and having their bottom faces of greater width than the top faces whereby the groove or channel is left between the upper parallel edges of adjacent blocks, key-bars having longitudinally embedded reinforcing rods, said bars extending across the joints of the blocks forming a loose fit with the channels and a filling of cement around the bars.



917,667. Shaft-Kiln With Generator-Gas Firing. Ernst Schmatolla, Berlin, Germany. Filed Feb. 25, 1907. Serial No. 359,217.

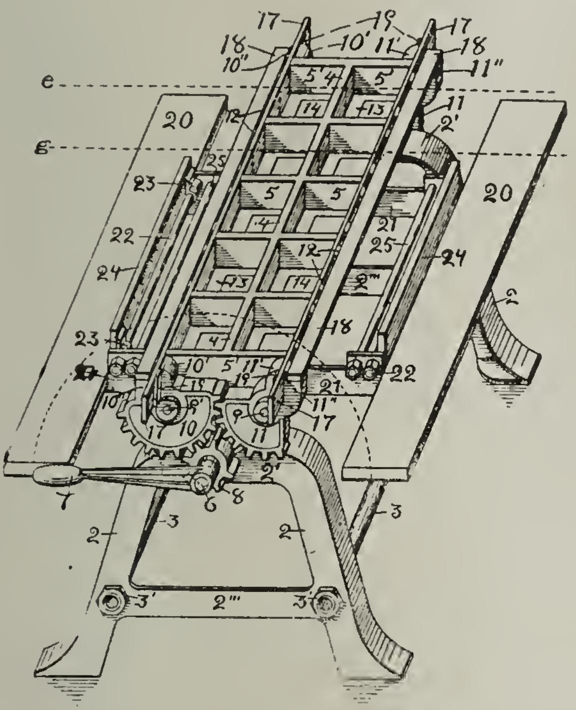
In a shaft-kiln with producer-gas firing the combination of the shaft (*a*) with the upper discharging doors (*k*) and a contracted part of the shaft lying above said upper discharging-doors and the lower discharging-doors (*k'*) and a second contracted part of the shaft arranged between said upper and lower discharging-doors, as and for the purpose set forth and represented in the drawings.



In a shaft-kiln with producer-gas firing the combination of a shaft of oval cross-section with a cooling-shaft and a bridge dividing the lower part of said cooling-shaft and gas-supply flues arranged in said bridge, and upper and lower discharge-doors supplying air to the gas streaming through the gas-flues of the bridge to the shaft and allowing to discharge the burned material through said lower discharge-doors, for the purpose set forth and represented in the accompanying drawings.

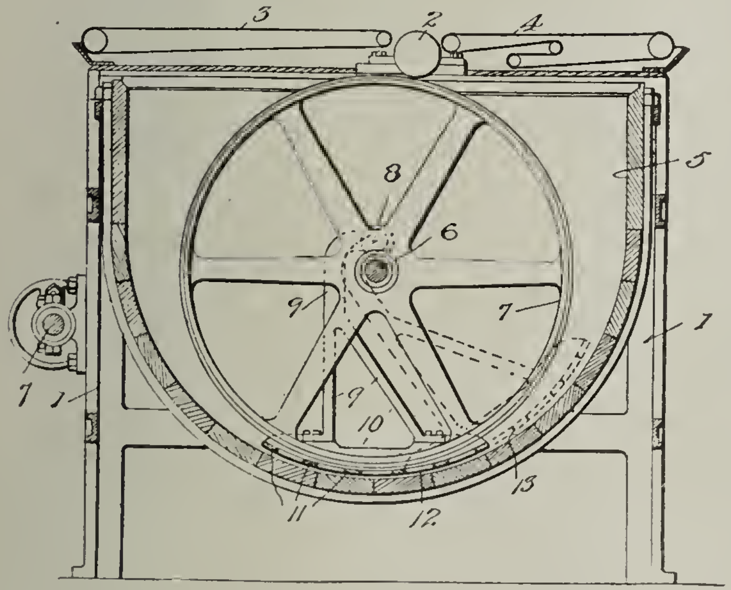
917,036. Multimolding Two-Side-Delivery Hand Brick-Machine. Frank H. Folden, Blair, Nebr. Filed May 7, 1908. Serial No. 431,510.

The combination of end-plates and a back-plate in fixed angular relation, a bottom-plate pivoted to swing between said end-plates, a slidably-removable front-plate, guides to carry said front-plate in fixed angular relation to said pivoted bottom-plate and to swing said front-plate against or away from the front ends of said end-plates, a pivoted receiving-board disposed to receive said slidably-removable front-plate, a removable pallet board, and a support in fixed angular relation to said pivoted receiving-board to carry said removable pallet board.



917,586. Tile-Coating Machine. Frederick E. Goldsmith, Middletown, Ohio, assignor to The Ceramic Machinery Company, Hamilton, Ohio. Filed April 27, 1907. Serial No. 370,655.

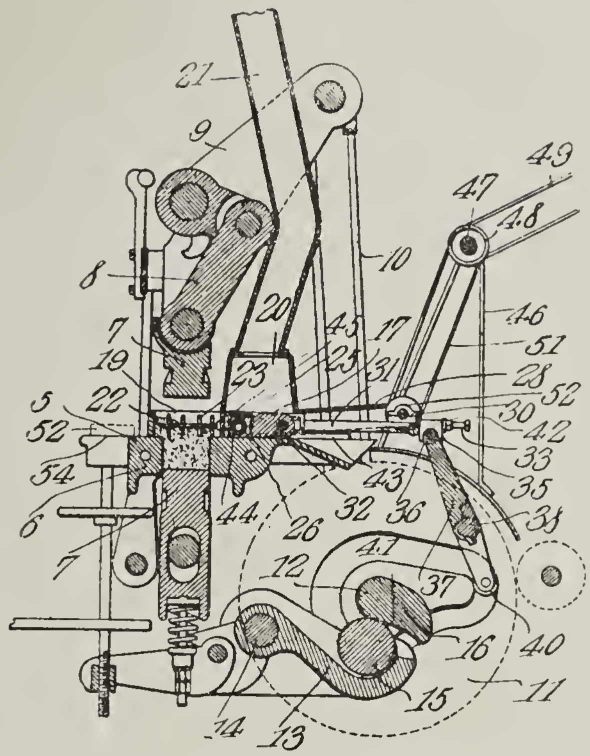
In a machine for coating, the combination of a coating receptacle, a lifting drum, an agitator, and means for impelling the agitator.



In machines for coating, the combination of a coating roll, a coating receptacle, a rotary drum for elevating coating material, an agitator comprising a grid arranged to move between the drum and the bottom of the receptacle, a pivotal mounting for the agitator above the axis of the drum, and means for impelling the agitator.

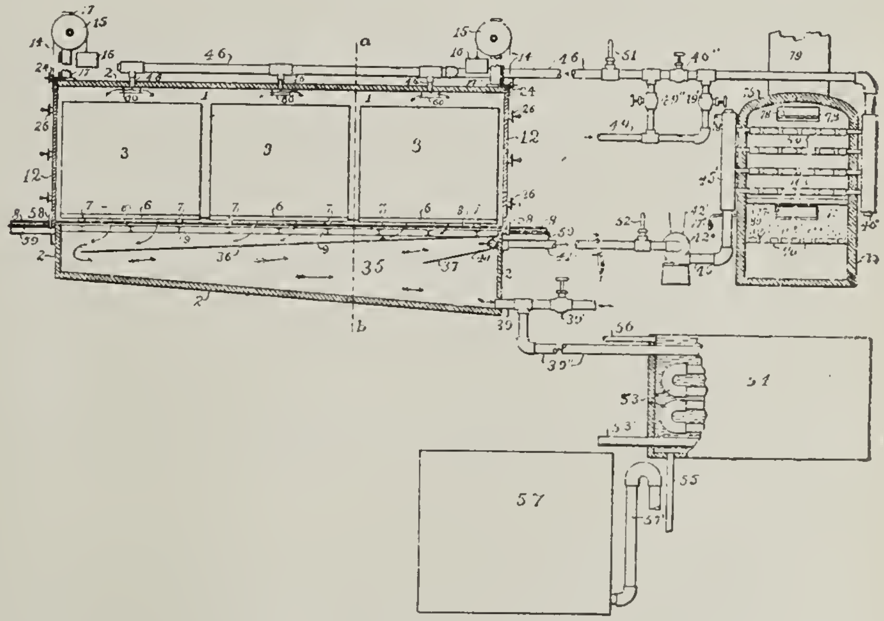
917,851. Brick-Press. Jesse I. Cross, Jacksonville, Fla., assignor of one-half to Raymond Cay, Jacksonville, Fla. Filed Aug. 3, 1908. Serial No. 446,718.

A press including a table, mold and coacting plungers, a hopper, a carriage mounted for reciprocation on the table and provided with pockets for delivering material from the hopper to the mold, an agitator mounted for rotation in the pockets and held from rotative movement during the reciprocation of the carriage, means for actuating said agitator at the beginning and completion of the carriage movement and means for operating the carriage.



918,335. Method of Drying Materials With Superheated Steam. David E. Lain, Bellingham, Wash., assignor of one-half to Edwin G. Jewett, Bellingham, Wash. Filed Nov. 16, 1908. Serial No. 462,920.

The method of drying lumber, or other moisture-bearing material, consisting in causing the steam to occupy the space around said material and to fill an endless circuit including the same, causing steam to traverse said circuit, superheating it while it is circulating, separating and ejecting the surplus vapor and moisture from said circuit without interrupting said circulation, and continuing said circulation and resuperheating of the steam until the temperature difference between the steam, as it enters said space around said material and as it leaves the same, indicates that said material has been brought to the desired state of dryness.



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Vol. XXXIV. JUNE 30, 1909. No. 12

"I like to read American advertisements. They are in themselves literature, and I can gauge the prosperity of the country by their very appearance."—William E. Gladstone.

When times are dull and people are not advertising is the very time that advertising should be the heaviest. Ninety-nine out of every hundred merchants advertise most when there is least need of it, instead of looking upon advertising as the panacea for their business ills.—John Wanamaker.

Did you send in your subscription. We can use it—now.

Silence may be golden, but it doesn't always get the coin.

A man seldom tries to belittle other men unless they are bigger than himself.

Advertising insures the representative a respectful hearing when he arrives to talk with a prospective customer.

Perhaps an open countenance may be all right, but people who are never able to keep their mouths closed are all wrong.

As long as a man is willing to pay the freight he can always find a crowd standing around waiting to give him the glad hand.

"The first half of the year is now virtually completed. A comparison with the same period of last year discloses gains in payments through the banks equal to 19 per cent, in bank resources 12 per cent, in deposits 12.5 per cent, in loans 13 per cent, in value of new buildings 77 per cent, and in value of business improvements 214 per cent. Commercial failures are also notably reduced in numbers, and in liabilities the amount is 33 per cent under 1908 and 52 per cent under 1906.

"All the comparisons with the great business year of 1906 exhibit more substantial gains, except discounts at the banks, which appreciated 12.2 per cent. The more recent comparison also includes recovery in values of various commodities and remarkably high quotations in breadstuffs, live stock, and provisions.

Mr. Fitzpatrick says—Those authorities, the architects and engineers, know, or should know, what is fireproof and what is not. They know that the Parker Building in New York, was built of stone and of brick and of steel and of hollow fireproofing tile, all splendid materials in themselves, but that they were not properly put together, and that much of the steelwork was left exposed. In that one "economy" was the whole structure imperiled. A saving was effected of perhaps $4,000, and the loss will reach nearly $2,000,000!

That and the other slovenly or "economically" erected incombustible buildings, and then the fire-traps, painted with so-called "fire-proof" paint, and those other farces are what bring discredit to our cities and show us up to the world as incompetents.

Here it is quite the common thing for a city's annual fire loss to reach $1,500,000. No city in Europe of equal size averages over $200,000. And our architects and engineers know as well how to build a fireproof building as they do in Europe, and they knew it as well when the Parker Building was constructed as they do to-day.

The mistake of the matter is the poor policy that dictates alleged economies in initial cost of construction, and the placing of extravagant ornamentation upon the exterior at the cost of the proper protection of the structure, a shoddy love of display. Nine-tenths, yes, ninety-nine-hundredths, of our buildings are mere whited sepulchers, fire-traps of the worst kind, because they purpose to be better than they seem, even "fireproof.'

Few days pass by when there is not a blaze started in some one of our great skyscrapers in New York, Philadelphia, Chicago, etc. That incipient blaze finds nothing in the structure to feed upon or to damage, and it is quickly extinguished. Nothing is heard about it. There has never been a fire of serious magnitude in a really fireproof building. There cannot be, and that is why public attention has never been directed to that fact. The good, law-abiding citizen goes his way in peace, and you seldom read of his virtues; it is the criminal who gets the publicity. So it is with fire; it is the crminals, so to speak, among buildings that are destroyed.

RUSH OF BUSINESS DEMANDS A NIGHT CREW

The Bickford Fire Brick Co., of Curwensville, Pa., is now in full tide of success and has at present sufficient orders to keep the plant running until the first of September. To meet this demand and to be in readiness for further orders, a night crew will be put on next week. Prosperity has struck the Bickford Fire Brick Co., good and proper, which is due to their fine product, expert service and judicious management.

OBITUARY

William M. Glimpse for many years engaged in the brick manufacturing business in McLean, and adjoining counties, in Illinois, died at his home in Deer Creek, after an illness of many months of heart disease and stomach trouble. He was born in Indiana in 1845. He leaves a widow and two children. J. C. Glimpse, a son resides at home and was in business with him.

Andrew Denk, aged 84 years, died at his home, 1226 North Bismark Ave., Indianapolis, Ind. Mr. Denk formerly was a manufacturer of brick and later was a gardener.

O. H. Nordstrom, a pioneer and brick manufacturer at Punxsutawney, Pa., died at his home after a short illness. He was 87 years old and lived there all his life. The Southside Brick Works was the plant he was interested in. Mrs. Nordstrom will continue same with S. C. McQuown as manager. He was also a successful inventor.

FIRE! FIRE!! FIRE!!!

The extensive brick works of Roger Moore's Sons & Co., near Wilmington, N. C., were destroyed by fire which originated from the dry house, entailing a loss of from between $20,000 and $30,000, with small insurance. The firm had a million brick in the yard so they can take care of their customers until the plant is rebuilt.

Flames broke out in the boiler room of the brick plant of the W. G. Bush Brick Mfg. Co., at Nashville, Tenn. The loss will amount to $15,000. No insurance was carried on the burned property. A big force of men was put to work at once and are preparing to rebuild.

THEY SUGGEST THAT CONVICTS MAKE DRAIN TILE

Convict labor to make drain tile for the use of farmers of the state was one of the novel suggestions made at a meeting of the Seventh district bankers, held at Marshall, Minn. George Welch, state immigration agent, who took part in the discussion, returned from the meeting.

The bankers did not resolve in favor of the proposition, but they took it up for discussion. It was generally agreed that drainage is one of the things necessary to improve the farms of the state, and those who know believe that even in the older parts of the state, the southern counties, the value of farm lands could be improved 23 per cent by being properly drained. The large marshes are being drained with dredge ditches, but the small sloughs must be tiled drained if the work is to have permanent results.

The principal reason why there is not more tile draining done is that drain tile is expensive. It was suggested that if the convicts at the penitentiary could make the tile they could be sold to the farmers much cheaper than at present.

One argument advanced in favor of this plan was that it does not require skilled labor or expensive machinery to make drain tile. Some skilled labor and considerable expensive machinery are required in the twine factory, and more will be needed to make farm machinery, so that the state is compelled to hire skilled men to do a great part of the work.

The making of drain tile at the state prison would not interfere with any skilled labor in the state.

ACCIDENTS, DAMAGES AND LOSSES

R. S. Rhoads, Columbus, Ohio, agent of the American Sewer Pipe Co., was exhonorated from alleged charges of trying to bribe city officials of Columbus.

Bart. Quinto, an Italian, was killed in a cave-in at the Davis Brick yard at Berlin, Ct.

Receivers have been appointed for the Bartlett Brick Co., which owns brick yards at Hudson and Roseton, N. Y. The company was incorporated in 1906 with $200,000 capital stock and the several stockholders could not agree. The receivers will operate the property until it can be sold and wound up.

Benj. Watkins was awarded $2,500 damages for the loss of a foot in the machinery of the brick plant of the Clay Center (Kansas) Pressed Brick Co.

Michael Finney, a Castleton, N. Y., brick yard hand, beat to death Frank Worzach, a farm hand employed near the plant.

John Myers of Ridgeway, Pa., an employe of the Elkins, (W. Va.) Brick Co., met instant death at a feeding table of a brick machine. His neck was broken.

William McKinley an employe of a Cherryvale, Kansas, brick works, is alleged to have disappeared with $5,000 belonging to Mrs. Nellie Hockett, a widow of Independence, Kans., whom he was to marry the next week.

The Knickerbocker Trust Co., has commenced a foreclosure suit against the Kansas City (Mo.) Gray Brick Co., which has a plant at Bonner Springs, Kans., and a receiver has been appointed.

Mechanics liens have been filed against John Peirce Co., 90 West St., New York, for over $20,000 by two fire proofing concerns. The company is in the hands of a receiver.

As the result of a quarrel in the Lahey Brick Yard at New Windsor, N. Y., John Hedrich, the engineer of the yard was shot by an Italian in the lungs. He took the gun away from his assailant and shot him, though less seriously.

PLANS FOR A LARGE TERRA COTTA PLANT

The changes in the management of the Atlantic Terra Cotta combine have led indirectly to the proposed erection of a factory on Woodbridge creek on lands formerly owned by Cutter, Prall and others.

William D. Frerichs, of Tottenville, formerly superintendent of construction in the Tottenville plant of the Atlantic Terra Cotta Company, is at the head of the new concern, which is entirely independent of the combine. He was in Perth Amboy looking over sketches of the tract in Woodbridge township, upon which will be erected a modern terra cotta plant. Mr. Frerichs is backed, it is understood, by the Grants, who until recently headed the Atlantic concern.

Approximately eighteen acres of land have been purchased. Plans and sketches are being drawn as rapidly as possible, so that actual work may be started at an early date. The ground is situated opposite the Vulcan Detinning Works, and adjoins Woodbridge creek, thus having excellent water and railroad transportation facilities.

They propose to manufacture terra cotta of the best grades. It is their intention to erect twelve kilns to start with and to employ about 200 men. The various departments will all be on the premises. Engineers Mason & Smith have surveyed the site, which is almost square in shape.

CLAY RECORD ALWAYS PLEASED TO CORRECT AN ERROR

In the Clay Record of May 29th, page 32, we published an article headed "Brick company boycotts Portland" taken from the Portland Oregonian. Our attention has been called to the article not being correct and we hasten to correct as far as possible an error. The following letter is a copy of the one sent to the Oregonian. It will give a correct statement of the reason for not selling brick in Portland.

To the Editor, Oregonian, Portland, Oregon.

Seattle, Wash.

Dear Sirs:—Under date of April 23rd, you publish in your valuable paper the statement that our company last year established an agency for the sale of paving brick in Portland, and failing to get business withdrew from the field in a huff, and now refuse to furnish brick to your city from pique.

The facts are: We did establish an agency and tried to promote business. Our efforts to get business were not as the time successful, and in the meantime we were offered, and accepted, business from other places, which called for the entire output of our paving brick factory for the greater part of the current year. Having nothing left to sell in Portland, we closed our office there and for the time being, withdrew from the territory.

Our agent who was working on a commission basis, was disappointed at his lack of success, and probably made some statements which left the impression, leading to the statements in your article in question. The facts are, however, as we have stated them; having no paving brick left to sell, we have withdrawn from the Portland market. At some future time we expect to endeavor to furnish in your city the best street paving material known—vitrified brick.

Hoping you will give this letter space in your paper, and assist in correcting a false impression, we beg to remain,

Yours very truly,
Denny-Renton Clay & Coal Co.

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ACTION OF BRICK KILN GASES ON VEGETATION

For years the brick makers of French Flanders have been paying indemnities to neighboring farmers for the damage done to crops by the gases discharged by the brick kilns. The greatest damage is done in foggy weather and during the precipitation of dew. No injurious effect on vegetation is produced by lime kilns situated near the brick kilns and using the same coal.

It appeared evident that the injurious constituent of the products of combustion was made harmless by lime, and it was suspected that this ingredient was sulphur dioxide, formed by oxidation of the pyrites contained in the fuel. This gas, if sufficiently diluted with dry air, does not injure vegetation, but in a moist atmosphere it becomes converted into sulphuric acid which destroys all vegetation on which it falls. In the lime kilns the sulphur dioxide combines with lime to form calcium sulphite, which remains in the kiln.

This theory was confirmed by experiment. Wet cloths were hung to windward and leeward of a brick kiln for a time and the moisture wrung from them was analyzed. Sulphuric acid was found in the leeward but not in the windward cloths. The obvious remedy for the existing state of affairs, therefore was the addition of a sufficient quantity of lime to the brick kiln. This plan was adopted last season by several brick makers with great success and at a cost of only two or three cents per thousand bricks. In addition to the prevention of injury to vegetation, it was observed that the workmen suffered less from the effects of heat and discharged gases, drank less, and enjoyed better health than formerly. —Scientific American.

N.A.P.B.A. CALLS CUYAHOGA COUNTY ROADS FINEST IN THE WORLD

Cleveland and Cuyahoga county, Ohio, have the finest paved streets and roads in the world, according to paving brick manufacturers of other states.

The National Association of Paving Brick Manufacturers recently closed its quarterly meeting at The Hollenden. During their stay here the brick men were given a 60-mile automobile trip over city and country roads. They are loud in their praise of them.

"The roads in and about Cleveland are the finest to be found anywhere," declared J. W. Robb, Clinton, Ind., vice-president of the national association, after the trip. "They are performing a wonderful reformation in rural roadways and increasing property values amazingly. The value to Cleveland cannot be estimated in dollars and cents.

"The roads about Cleveland are of the very latest type of construction, too, and incorporate all the latest ideas concerning road building to be found anywhere. They are as nearly perfect as it is possible to make them and are certainly a revelation to the rest of the world as to how rural highways should be treated."

W. P. Blair of Indianapolis, secretary of the national association, who has studied brick pavements all over the United States, is also warm in his praise of Cleveland roads as well as those in the country districts.

"We were greatly pleased with the development in construction ideas," said Mr. Blair. "This applies to work in both the city and the county.

"Your roads now are the finest in the United States, the maintenance charges being less than elsewhere. It doesn't seem to make much difference if the roads are three or fourteen years old, the maintenance is about the same. They even seem to grow better with age."

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ARKANSAS BRICK MANUFACTURERS MEET AT FORT SMITH

The state convention of the Arkansas Brickmakers' association met in Fort Smith June 22nd, in the rooms of the Commercial club. About thirty members were present.

M. C. Burke, of the Burke Bros.' plant, is president of the association, and C. E. Taylor of Little Rock, is secretary. He is also secretary of Arkansas Brick and Manufacturing Co., of the capital city, and a members of the Hardware Men's association.

The association was in session for two days, and the members had several important matters to consider. Brick making is now one of the most important industries in the state.

The members selected Little Rock as the place of meeting in 1910 and elected the following officers: M. C. Burke, Fort Smith, president; M. L. Case, Pine Bluff, first vice-president; M. P. O'Neal, Hope, second vice-president; C. E. Taylor, Little Rock, secretary and treasurer.

◆

DOWS BRICK AND TILE WORKS MAKING A RECORD RUN

The Dows, (Iowa), Brick and Tile Works are enjoying the most prosperous year in the history of the organization. They are at the present time over sixty cars of tile behind on the book orders, and will be forced to run over time in order to catch up.

The owners now have four factories located at Dows, Livermore, Lohrville and Rhodes, and by shipping from all these points are able to keep fairly well within the scope of their orders.

Besides supplying the trade for a great distance each way from Dows, the local concern maintains agencies in all the neighboring towns, and receives many immense orders from a great distance.

TORONTO BUILDERS HANDICAPPED BY SHORTAGE OF BRICK

Owing to the unprecedented demand on the brick manufactories, which have been unable to take care of the orders in good time, building operations are at a standstill in some sections of the city of Toronto, Ontario.

Many of the plants are running with a double force, however, with consequent increased output, and it is therefore anticipated that the situation will soon be relieved.

The comparative hard time last year influenced the manufacturers to limit their output, with the result that the old stock available for this spring's building was much smaller than usual. As it happened, spring opened with money fairly plentiful, and with people in a position to proceed with their proposed building program. New residences all over the city were started and in a short time the supply of brick was eaten up. Some contractors who had figured on paying $9 for brick for certain houses found themselves in the face of the shortage obliged to pay $12, and even higher prices, in order to complete their contracts. The plants by putting on larger forces are now gradually overtaking the demand. The ruling price at the present time is about $9 per thousand.

W. N. McEachern of Kew Beach, who builds houses for clients, says that operations had been held back for lack of brick, but the manufacturers were increasing their output rapidly and he anticipated no further delay. Mr. McEachern says there are about 80 brick houses under construction at Kew Beach.

HATCH BRICK COMPANY NOW IN NEW HANDS

By the transfer through the offices of Stowe & Palmer of the entire property of the Hatch Brick Co., Salt Lake City, Utah, to the recently organized Crown Brick Co., added impetus will be given to the manufacture of brick in this locality. The total paid up capital of the company, amounting to $75,000 out of the entire capitalization of $100,000, will be used to purchase the plant and equipment. Additional property, amounting to 126 acres of excellent brick clay, had been purchased by the new company, and a quantity of improved machinery will be ordered at once, in order to carry out the business of the company more effectively. It is proposed to double the capacity of the present plant.

Officers of the new concern are as follows: A. M. Wrench, president; H. S. Stowe, first vice-president; Parley E. Hatch, second vice-president; E. B. Palmer, secretary; L. C. Riter, treasurer; W. S. Elton, manager. Parley E. Hatch, manager of the Hatch Brick Co., will remain with the new concern.

The plant is located about six miles north of the city in the midst of a large area of clay land, recently purchased by the new concern. One reason for the sale of the Hatch Brick Co., was the lack of adequate facilities for handling brick, and the new company intends to obviate this by obtaining proper machinery at once. Much of this has been ordered by telegraph to save time. It has been pointed out that there is a scarcity of good brick in the vicinity of the city and officers of the new company anticipate a business which will tax the capacity of the plant as soon as everything is in working order.

OREGON COMPANIES WILL CONSOLIDATE

The Pacific Brick & Mantle Company, Portland, Ore., recently incorporated with a capital stock of $100,000 for the purpose of manufacturing pressed brick, Elbram mantle brick and Elbram waincoting, has secured a site in East St. John, Ore., and merged with the St. John Clay & Pressed Brick Company. The merged company is preparing to erect a brick building two and a half stories, 40x100, for its manufacturing plant. The company expects to start on the erection of this building at once.

NO MORE BRICK YARDS IN DENVER

No new brickyards will be allowed within the city limits of Denver hereafter. Mayor Speer and the fire and police board settled this question recently. An order was issued by the board to the city building inspector, Robert Willison, to grant no more permits for the erection of such plants in the future.

The order went into effect June 2, when A. H. Baker, who recently purchased a block of ground at East Seventh avenue and Clayton street on which to establish a brickyard, was notified to cease work on his plant. Mr. Baker must either shut up shop or move his manufactory into Adams or Arapahoe county.

Baker was wroth when served with the order and went to see his lawyer about it. Litigation may follow.

The city is backed in its action by an ordinance. This ordinance is now before the supreme court in a suit involving the municipality's power to abate a nuisance. The case was lost by the city in the county court.

The fire and police board declares that if the present ordinance is not good, another will be drafted and passed by the city council. Mayor Speer is of the same mind.

Patrick Rogers is the defendant in the action. His brickyard was on Tenth and Knox court. Complaint was made to the city council two years ago against the brickyard. It was held to be a nuisance and closed. Rogers immediately took the matter to the county court and won, the court holding that the council could not declare such a place a nuisance, but that a private individual might do so.

N.Y. MARKET SHOWS UNUSUAL CONDITIONS

Most of the shipments of brick which are arriving are wash brick of poor color and consignees are taking them at a discount and selling them accordingly. The demand for good brick continues, the firm of John A. McCarthy & Brother, of Rivington, Tompkins and East streets and One Hundred and Fiftieth street and the Harlem river alone reporting an inquiry for 50,000,000. As an evidence that actual buying accompanies this inquiry, Mr. McCarthy said that in the last month he had sold $500,000 worth of brick in his new Harlem place, exclusive of that disposed of in his downtown yards. Speaking of the brick situation, Mr. McCarthy said:

"It is the first time within my recollection, and I have been in business 20 years, that brick has been higher at the opening of navigation than at the close. It is also the first time within my recollection, at least, that new brick has been higher than winter prices. In October we could buy brick for $5.25 and $5.50, while now we are paying $2 more. Every dealer in New York is looking for a drop, but they have been looking for a long time without seeing anything. The demand continues big, however, and when new brick, that is anything like good brick, begins to come in there will be a change.

ALASKA ENTERPRISE SHAPING FOR WORK

The Alaska Clay Works Co., of Alaska, ten miles east of LeBeau, S. Dak., recently completed an artesian well on their property which by practical test has a flow of 250 gallons of water a minute and produces about 100,000 cubic feet of gas in twenty-four hours. The well has a four-and-one-half inch top and is 1,700 feet deep. The gas production will be utilized for power purposes in the operation of the plant, the machinery for which has been purchased and will be installed during the next thirty days. Brick, tile, etc., will be manufactured in large quantities and as the works are located in close proximity to an abundance of clay that has all the good qualities for brick making a ready market will be found for the output. The venture is promoted by Messrs Haynes and Tofflemire and its success is assured

TESTS OF BRICK AND TERRA COTTA BLOCK COLUMNS

Architects and engineers will be interested in a publication of the Engineering Experiment Station of the University of Illinois, on the properties of brick and of terra cotta block in compression, as determined from experimental work carried on in the materials testing laboratory. The publication is Bulletin No. 27, Tests of Brick Columns and Terra Cotta Block Columns, by Arthur N. Talbot and Duff A Abrams. It gives the results of tests of a number of piers or short columns built under a variety of conditions. Hard and soft bricks and blocks were used; and lime mortar, natural cement mortar, and lean and rich Portland cement mortar were tried. The effect of indifferent workmanship was determined. Both central and eccentric loadings were used. In the central loading columns of high-grade building brick laid with rich Portland cement mortar carried from 3,220 to 4,110 lbs. per sq. in. and the results ranged down to 1,360 lbs. sq. in. for columns laid in lime mortar and 1,030 lb. per sq. in. for columns of soft brick laid in rich mortar. The terra cotta block columns carried from 2,700 to 3,790 lb. per sq. in. The columns were found to fail at much lower loads after repeated loading than when a single application of the load was used. The tests under eccentric load show that the columns resist eccentric loading well, following closely the lows of mechanics of materials. The fact is brought out clearly that the stronger the individual brick or block the stronger the masonry, and that the strength of the mortar used affects largely the resisting strength of the structure. It is also evident that the better the individual piece the more important it is to have a mortar of high resising strength. Clay workers and builders will be interested in seeing how much gain in strength of structure is obtained with the higher grade of brick and also in the great advantage found in the use of a rich, strong mortar. The effect of the attempt to represent hurried or careless workmanship in laying up work was a loss in strength of say, 15 per cent. to 25 per cent., a smaller decrease in strength than was expected. The results of these tests go to show that wherever good material and workmanship are insured a higher load may be applied on masonry of this kind than is usually permitted.

Copies may be obtained gratis upon application to the director, Engineering Experiment Station, Urbana, Illinois.

L. P. BRECKENRIDGE,
Director of the Engineering Experiment Station.

ILLINOIS BRICK

The recent strength shown in the market for Illinois brick reflects that the stability of prices will mean permanent dividends on the shares. Prices are being held generally at $6 per 1,000 brick, which assures enough margin for at least 4 per cent. in dividends yearly. If the manufacturers are able to organize under the patent laws that price, or even higher prices can be arranged and held without conflicting with the Illinois anti-trust laws.

J. WALTER MILLER BRICK PLANT HAS MANY ORDERS

The J. Walter Miller Manufacturing Co., of Trenton, N. J., has received an order for one million brick which will be used in the construction of the new Y. M. C. A. building in Camden. The firm is also shipping out of Trenton 1,500,000 brick for a North Philadelphia factory; 1,000,000 brick for the addition to the Victor Talking Machine Co., of Camden; 1,300,000 brick to W. Robinson & Co., of Germantown, and 2,000,000 brick to Contractor J. D. Killen of Philadelphia.

THE BROUGHTON PLANT BOUGHT BY THE ALUMINA CO.

The brick manufacturing plant of P. B. Broughton & Co., located at Lewis Run, Pa., was sold under the hammer at Smethport by the sheriff on foreclosure sale, the purchasers being the Alumina Shale Brick Co., of Bradford. The purchase price was $31,000 cash.

The plant will be started in full operation at once, giving employment to from 60 to 75 men. Its capacity is 30,000 brick a day. It will b operated in conection with the Alumina Shale Brick Co.'s present plant, located a few hundred feet from it at Lewis Run.

The brick plant has been idle for more than a year and the anouncement that it is to resume operations, will be good news to many workmen.

The officials of the Alumina Shale Brick Co. will meet and make further plans for resuming work at the newly acquired plant.

FIVE MEN BADLY SCARED BUT NO ONE HURT

Cherryvale Republican— There was considerable excitement and no damage when the Kasigan gas line blew up near the plant of the Coffeyville (Kansas), Brick Co.

It seems that A. G. Liddle, supt. of the Kasigan Co., Mr. La Dow, J. N. Strickler, C. P. Dick and Ed. Dittman were testing the gas line, which was under tremendous pressure for the test, when all at once a joint severed and mud, clay, brick bats and men, all went in the air together. Dick got on his feet first and broke all sprinting records in the western hemisphere getting away. For that matter the other fellows were not slow in getting away. Mr. Dick not only the best stunt in his getaway but also had the forethought to go to the valve and turn off the gas. Aside from being splattered with mud the men were none the worse for their experience.

GEORGE C. GRAY FORMS ANOTHER PARTNERSHIP

In the last issue of the Clay Record on page 30, we told our readers about George C. Gray, who was formerly the secretary and treasurer of the Jenkins & Reynolds Co., of Chicago, but now the same officer of the National Builders' Supply Co., of Oklahoma City, Okla., we told our readers what an "Adonis" he was, etc., now comes the announcement of his marriage to the daughter of Mr. and Mrs. George Smith of Minneapolis, Minn. This happy event took place on the 19th day of June, and they will be at home at 110 West 10th Street, Oklahoma City, Okla., after July 1st.

The CLAY RECORD and many of its readers wish much happiness to Mr. and Mrs. Gray and hope that their troubles will only be little ones.

POTTERY NEWS ITEMS

The Cambridge Pottery Co., the Cambridge Art Pottery Co., and the Guernsey Pottery Co., Cambridge, Ohio, have each been incorporated with $5,000 capital. C. S. Mahon, James W. Bell, Fred L. Rosemond, Ella Marquand, Charles L. Casey and A. M. Sarchet are the incorporators.

The Uhl Pottery Co., Petersburg, Ind., will remove its plant to Huntingburg, where it has been getting fire clay for several years.

William Kulow, late supt. of the Columbia Pottery at Kokomo, Ind., and others, will organize a pottery company to make sanitary ware at Golden, Colo. O. T. Ellis will be business manager.

The William Brunt & Sons' pottery at East Liverpool, O., is now in operation, the first time for 18 months. With this plant in operation every local plant is on the active list.

SAND OR LIME BRICK OR BLOCK NEWS

The new plant of the Cape Henry (Va.) Granite Brick Co.

M. H. Igou, Watseka, Ill., will add cement brick and blocks to his brick and tile business.

The Clipper Tile Machine Co. has been organized to make tile machinery at St. Louis, Mo..

The Saginaw (Mich.,) Sandstone Brick Co., will increase its daily capacity from 22,000 to 50,000.

Simpson & Mellor of Soup City, Neb., are putting up an up-to-date cement brick plant at Mitchell.

A $10,000 boiler, machinery and hardening building is to be erected on Vogel's Island at Milwaukee, Wis., by the Wisconsin Composite Brick Co.

The Union Patent Tile Co., West College Corner, has been incorporated with $25,000. Directors are Wm. L. Pults, John D. Pults, Murray Bake and Andrew J. Shepard.

is built on the site of the one that was destroyed by fire some months ago. The plant cost $80,000. R. C. Marks is president and R. C. Marks, Jr., secretary of the company.

The Anamoose (N. D.,) Cement Block & Tile Co., has been incorporated with $25,000 capital stock, by W. D. Frankhauser, C. F. Frankhauser and Wm. Konietzka.

S. Sternberg, buyer and seller of junk, has bought the French Broad Granite Brick Co. plant from the Coxe estate. The plant is near Asheville, N. C., and represents $48,000.

The Unit Brick & Tile Co., Charlotte, N. C., has increased its capital stock to $60,000 in order to establish another and larger plant to manufacture brick and roofing tile patented by F. M. Sawyer.

The Widby Island Sand & Gravel Co., Bellingham, Wash., contemplate establishing a cement, brick and tile plant on the Island near their plant. Nicholas Fox is the local manager of the concern.

The Oklahoma Cement Brick & Product Co., Oklahoma City, Okla., has been organized to make 30,000 cement brick daily. W. C. Burke is president; W. G. Kenney, treasurer and E. L. Benedict, secretary.

The Watertown (N. Y.,) White Brick Co., has been incorporated with $10,500 capital stock. The directors are, L. M. Aldrich, F. H. Root and B. W. Aldrich of Theresa. They will operate the plant recently bought by them.

Henry C. Grieme Co., Amsterdam, N. Y., has been incorporated with $135,000 capital stock, to manufacture brick, stone and building material. Incorporators, M. Grieme, Wm. N. Niles and A. C. LeHahn, all of Amsterdam.

The Wawaset Stone Co., New York, has been incorporated with $500,000 capital stock, to manufacture brick, stone, etc. Incorporators, Clark Mellen of New York, C. Mellen of Garden City; P. E. Whitten, Mt. Vernon, and C. W. Robinson of New York.

The Rochester (Mich.), Sand Brick Co., is making arrangements to begin operations soon. The company was organized two years ago but did not operate a plant on account of the panic, which struck them. The building will be rebuilt and machinery replaced.

The Olean Pressed Brick Co., at Olean, N. Y., will increase the capacity of the plant by building several additional Wilson kilns.

The Jonesburg Clay & Mining Co., 1907 Geyer [illegible] St. Louis, Mo., are now shipping raw fire clay. The equipment of their plant consists of a mile of track, a locomotive, cars, pumps, boiler and 365 acres of fire clay. The clay is especially valuable for Terra Cotta, making for fire proof linings, and fire brick.

M. J. Lee of Crawfordsville, Ind., has bought the Paola (Kansas) Brick & Tile Works of Mrs. Dr. Reichard and will operate same. New machinery will be added. The name of the concern will be the M. J. Lee Drain Tile Co.

MISCELLANEOUS ITEMS

Wheatcroft & Co., Grayville, Ill., is thoroughly overhauling its brick and tile works.

W. E. Jackson has bought a half interest in the Waterbury, (Vt.) Brick Works with B. F. Atherton.

Business men of Worthington, Mo., are seeking to get Unionville parties to locate a tile factory at their place.

The Red Wing (Minn.) Stoneware Co., will expend $10,000 on improving their new plant at Marshalltown, Iowa.

The Ceramic Brick Works, East Liverpool, Ohio, is enjoying a period of prosperity and arrangements are being made for an indefinite run.

The Reynolds Tile & Drainage Co., Greenville, Miss., has been incorporated with $50,000 capital stock by T. P. Reynolds, W. A. Everman, and others.

The Piedmont Brick Co., Gaffney, S. C., has been incorporated with $2,000 capital stock, and the Sardinia (S. C.) Brick & Tile Co. incorporated with $3,000 capital.

The El Dorado (Ark.) Brick Co. reduced its capital stock to $25,000 and elected the following officers: J. R. Randolph president, and J. J. Hudson secretary and treasurer.

The Detroit (Mich.) Vitrified Brick Co., whose plant is at Corunna, is expending $25,000 in improvements on the plant, which is turning out 10,000,000 brick annually.

A. M. Donnell Co., organized at Leeds Jun., Maine, with $50,000 capital stock by A. M. Donnell, of Wales, president, and W. H. Judkins, of Lewistown, secretary and treasurer.

The Alumina Shale Brick Co., of Bradford, Pa., has bought the property of P. B. Broughton & Co., located at Lewis Run. The price paid was $31,000. The plant will be operated at once.

The Ardmore (Okla.) Brick & Tile Co. has changed its management. J. B. Spragins is now in charge of its financial affairs and Will Harris is the manager of the plant, succeeding Mr. Frompton.

Harrison & Hairgrove have commenced the building of the new brick plant at Jacksonville, Ill., Mr. J. N. Hairgrove, one of the partners just returning from a six weeks' wedding trip and is now ready for work.

The Buckeye Brick & Block Co., Zanesville, Ohio, has been incorporated with $25,000 capital stock, by Fred G. Curtis, W. A. Shoemaker, Isaac Humphrey, and others. They will operate the Lane plant at Ellis.

W. C. Cockran, of Chanute, Kansas, represents a company that will build at Tulsa, Okla., a brick and tile plant that will have a daily capacity of 125,000 brick per day. Plans are now being carried out for this purpose.

The Slater Brick Co., Billings, Mont., have decided to double the capacity of their plant so as to keep up with orders. The new machinery is to be Dry Press, and order also has been made for a complete outfit for making tile.

The Atlantic Tiling Co., Jersey City, N. J., has been incorporated with $100,000 capital stock. Incorporators are A. W. Christini, of Red Bank; A. Metzner, of Perth Amboy, and A. C. Wright and L. A. Albert, of Brooklyn, N. Y.

The Alsey (Ill.) Brick & Tile Co., are now doing a rushing business. The officers of the company are, H. T. McLaughlin, president; Byron McEvers, Secretary and J. E. Hardy, formerly of Momence, superintendent. They will make high grade pressed and enameled brick.

The Creighton (Mo.) Clay Co. will increase the capacity of their plant.

The Gotebo (Okla.) Gas & Press Brick Co., have increased their capital stock from $20,000 to $125,000.

The Brown & Yoke Brick plant at Arkomo, near Ft. Smith, Ark., will be ready to start work in 30 days. Gas is in the yard ready for use.

At a meeting of the stockholders of the Fertile (Ia.) Brick & Peat Co., it was decided to start the two plants in operation. A large amount of stock was also subscribed for.

The Wellston (O.) Brick & Coal Co., has been incorporated with $75,000 capital stock by John T. Ogier, John H. Sellers, J. W. Ogier, A. K. Williams and O. H. Ogier.

Gold Bros. Brick Co., Big Stone, S. Dak., have installed a new brick machine and will build several new kilns so as to increase their plant to an annual capacity of 4,000,000 brick.

The United States Tile Co., Parkersburg, W. Va., has been incorporated with $50,000 capital stock by C. P. Elzey, K. Snodgrass, James A. Bryan, Henry L. Bartlett and E. R. Patton.

The Bramhall Brick Co., Durant, Okla., has been incorporated with $5,000 capital stock. Directors are, J. D. Bramhall, John P. Bramhall, James O. Campbell, John Hathburn, David S. Bramhall and A. S. Rice, all of Durant.

W. H. Crowl of Cherryvale, Kansas, has purchased 120 acres of land at Tulsa, Okla., and will remove the Crowl Brick & Tile Co. plant to Tulsa, having same in working order in 100 days. The shortage of gas made the move necessary.

The Westport Paving Brick Co., Baltimore, Md., has been incorporated with $250,000 capital stock. The incorporators are, J. Kemp Bartlett, Chas. J. Taylor, John W. Hall, Melville H. Carter, Wm. L. Nice, William H. Perkins and Edgar Bentley.

The Bloomdale (Ohio) Brick & Tile Co., has been incorporated with $15,000 capital stock. The incorporators are, W. R. McPherson, M. L. Wisely, O. F. Campbell, L. R. Good and J. M. Stecker. The company will build a four kiln plant on the site of the present factory.

The Hennessey (Okla.) Brick & Tile Co., has been organized with $25,000 capital stock. The officers are, A. E. Lane, president; Ben Thorne, secretary and John Smith, treasurer. They have taken over the Lane Brick Works and will expend $13,000 in new machinery and a drying plant.

J. W. Moore, who is superintendent of the Diamond Works at Uhricksville, O., is organizing a stock company for another plant to manufacture clay products in that city.

The Ashaway Clay Co., Ashaway, R. I., is doing a splendid business and will soon enlarge the kilns and put in additional machinery.

At the annual meeting of the Mound City (Kansas) Brick & Gas Co., O. A. Kentnor resigned and the following officers were elected: W. D. Cochran of Chanute, re-elected president; C. J. Kiser, Mt. Olive, Ill., re-elected vice-president; H. C. Reese, treasurer; J. B. Paul, secretary and F. A. Druff general manager.

U. J. White, Dupont, Fla., will establish a plant for making drainage and irrigation tile.

Hill & Anderson, Millen, Ga., will erect buildings and establish a plant to make 20,000 brick daily.

The Sedalia (Mo.) Clay Mfg. Co., are making brick in their temporary plant and preparing to build permanent buildings and kilns.

The Harley Pottery Co., Nashville, Tenn., will add a plant for the manufacture of fire brick, flue lining, etc. The outlay will be over $50,000.

T. Robbs and J. S. Lemmonds have purchased the Gaffney (S. Car.) Brick Co. plant from J. H. Berry and will continue the manufacture of brick.

The officers of the Manteno (Ill.) Brick & Tile Co., for the year are: D. G. Lee, president; George Hatch, vice-president; George Jackson, secretary and Otto Weber treasurer.

The Acme Roofing Tile Co., 606 Century Bldg., St. Louis, Mo., has been reorganized and capital stock increased to $200,000. R. E. Bradford is president. The plant will be increased to four times its present size.

The Burnt Knoll Brick & Coal Co., Boulder, Colo., has been organized with $1,000,000 capital. The company has a tract of land six miles south of the city and will manufacture high grade red and buff brick and fire brick, also mine their own coal.

The Crown Brick Co., Salt Lake City, Utah, has been organized with $100,000 capital stock by A. M. Wrench, H. S. Stowe, M. J. True, W. S. Elton and E. C. Lackner. They have taken over the plant of the Hatch Brick Co., and will greatly enlarge it.

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68 William St. NEW YORK CITY

Indications are that a paving brick plant will be built at Mt. Sterling, Ill.

Webster Gillingham is getting ready to operate the brick yard two miles west of Springfield, Wash.

The Graham Brick Works at Emmett, Idaho, are working full time getting out 1,000,000 brick for which they have orders.

The plant of the Peru (Kansas) Brick Co., has been opened by Hudson & Cunningham, who will improve and operate same.

The Pittsburg (Kansas) Vitrified Brick & Paving Co., have landed a contract for 300 cars of paving brick for the city of Lincoln, Neb.

Travers & Johnson bought the Sioux Rapids (Ia.) Brick & Tile Works and put same into operation at once. Mr. Travers will manage the plant.

Harry Scott has lease on land at Chanute, Kansas, and tested clays for a brick making plant. A fair gas well is on the lease and another is being bored at present.

Dan Kent, S. L. and Frank Eggert, R. S. McKeehen and Ed. B. Reed have bought the Ivie Brick Works at Kirksville, Mo., and will build new kilns and add machinery to the plant.

The Pyrmont Brick Co., Lincoln, Placer Co. Calif., are making some extensive improvements to their plant. M. J. Dillman of Sacremento, is vice-president and manager of the plant.

Adam Nustzel of Ballard, Wash., has traded property for Ernest Carsten's interest in the Ballard (Wash.) Brick Co. W. C. Mitchell is the general manager, and F. L. Heidrich, president.

The Fee Fee Brick Co., capital stock $100,000, has been incorporated by W. C. Burke and H. F. Rogers of St. Louis, Mo., and Edward Rodgers, Eben Rodgers and C. A. Caldwell of Alton, Ill.

The Leeds (Ia.) Brick Works, which have been idle three years are to be started at once. A. L. Stetson of Los Angeles, Calif., owns the plant. C. Nelson at one time the owner will be the manager of the plant.

Cook & Haigh have been incorporated at Caldwell, N. J., with $50,000 capital stock. Incorporators are, I. N. Rodgers of Montclair; Howard M. Cook and Douglas D. Haigh of Essex Falls. They will manufacture brick.

C. W. Penniman, president of the Fort Scott (Kansas) Brick Co., has been engaged by the Guthrie Mountain Co. to operate the works at Mapleton and is now preparing to open same. The plant has been idle for some time and some additions will be made.

The plant of the Infusial Earth Mfg. Co., at Wilmont, Va., on the Rappahannock River, has been purchased by Baltimore, Md., parties and a company has been organized under the name Vulcan Fire Brick Co., capital stock $20,000. C. G. Chevalier is president.

The Georgetown, (S. C.) Brick Co., has been organized with $10,000 capital stock. The officers are Geo. B. Sanders, president, J. B. Steele, vice-president, A. M. Farson, secretary and manager. Arrangements are being made to build a plant in West Georgetown at once.

John Surgeon has purchased an interest in the tile factory at Fowlerton, Ind.

The directors of the United Fire Brick Co., North East, Md., have elected A. W. Perkins, president.

The Langenberg Brick Mfg. Co. works, at both Stevens Point and Whittlesey, Wis., are now running full force.

Mrs. W. W. Peasley has sold the old brick yard property at Kellogg, Iowa, and a chicken farm will be made of it.

It is reported that another large brick plant is to be built in Hocking Co., Ohio, near Carbonhill. The plant will cost $200,000.

The Piedmont (W. Va.) Brick & Coal Co., whose plant has been idle for some time is cleaning up the plant so as to resume operations.

The Dows (Ia.) Brick & Tile Co., are enjoying the most prosperous times in the history of the company and are behind with orders over 60 cars.

Wm. M. Colby of Mason City, Ia., is the representative of several Iowa capitalists that propose to erect a large brick and tile plant at or near Spokane, Wash.

The Whidby Brick, Tile & Pipe Co., has been organized with $200,000 capital stock to build a plant on Whidby Island. The office will be at Bellingham, Wash.

Tualitin Brick & Tile Co., principal place of business, Portland, Oregon, has been incorporated with $50,000 capital stock by E. W. King, G. F. Wittner and E. E. Coovert. The works will be at Tualitin.

Warren Overpack of Webster City, Ia., has bought the Orestes (Ind.) Tile Works from Fred Baum and will repair and remodel the plant at once. Mr. Baum will go to Sweetser and take an interest in the tile works there.

The Page-Reighard Mining Co., Mineral Point, Pa., has located a desirable run of fire clay on its land and steps have been taken to have a fire brick plant located there. An Engineering Co., has been engaged to make the surveys.

The Cimarron (N. Mex.) Brick & Tile Co., who recently started in business has found it necessary to open another yard so as to keep up with orders. Machinery of the latest pattern has been ordered and the plant will be built as soon as possible.

The
Coming Brick

At last it has been solved. Bricks can now be manufactured from furnace slag, much cheaper than clay, sand-lime or any other brick, both common or the finest face or press bricks. Crushing and transverse tests unquestionable.

Its cheapness of manufacture and its durability makes it the coming brick.

For particulars, address R. C. GANGEWERE, Patentee, Selma, Ala.

Will superintend erection of complete plants

FOR SALE

One power Repress, in number one condition, used only but a short time; capacity 10000 per day. Ask for full particulars.

American Enameled Brick & Tile Co.
1 Madison Ave. New York

POSITION WANTED

By an up-to-date man as manager or Supt. of paving brick plant, thoroughly practical and experienced in every detail of the business, plant construction, kiln building, and handling all classes of labor. A1 references. Address B 4

Care Clay Record, Chicago

Second-Hand Brick Machinery For Sale

1 two-mold brick press.
1 three-mold brick press.
1 four-mold brick press.
1 Freise stiff-mud auger machine, pug mill and cutter.
1 dry press mixer.
2 small engines.

Let us know your wants.

Scott Manufacturing Company,
1811 Third National Bank Bldg St. Louis, Mo.

Brick Plant for Sale or Lease

A conveniently located brick plant on the main channel of the James River, 90 miles from Richmond, 18 miles to Newport News, and 40 miles to Norfolk, all having a good steady market for brick. Easy transportation for large boats. Want to see plant in operation. Therefore would make very easy terms. Address

MRS. AGNES L. TURNER,
Ferguson's Wharf, James River, Va.

FOR SALE

Profitable brick plant and business; 20,000 capacity. 4-mold Boyd press; complete equipment. Splendid reputation. Economical situation. Supplies this section; no competition; a money-making plant. Owners have no other interests.

Address Durango Pressed Brick Co.,
Durango, Colo.

FOR SALE OR LEASE

A southern Minnesota Brick and Tile Plant, complete in running order; has done a good business last year. Good reason for selling. Address

Minnesota, care Clay Record,
Chicago, Ill.

FOR SALE

One No. 20 Cyclone Disintegrator, made by the C. W. Raymond Co. Has been used about two weeks. Practically new. Address

COLUMBIA BRICK & PLASTER CO.
North East. Md.

POSITION WANTED

As general superintendent or general manager of a large brick works or the construction of such. Have twenty years practical experience and thorough knowledge of the business.

Address Brick Supt.,
P. O. Box 81, Coffeyville, Kans.

WANTED

A first-class Engineer who can handle a corliss engine and look after machinery in brick plant. Must be a man of ability, later full charge of plant will be given to him if satisfactor. Will pay $900 a year to start

Address "B E" Care of Clay Record, Chicago.

WANTED

One second-hand medium size steam shovel for handling clay or sand.

Address E. J. KELLER,
Lexington, Okla.

FOR SALE

Right and left-hand One, Two and Three Way Switches, of various gauges, radius and weight rail, at special prices.

THE ATLAS CAR & MFG. CO.,
Cleveland, Ohio.

DRYER CARS

We have on hand a lot of second hand single and double deck Dryer Cars. These cars are almost new having been used but a short time and are in A-1 condition. We offer them at a very low price for quick sale.

The Atlas Car & Mfg. Co.
Cleveland, Ohio

FOR SALE

One hardening cylinder, 72 ft. long, 6 ft. diameter.
One 4-Mold Andrus brick press.
One 9-foot Scott Dry Pan.
One Cedar Rapids Sand Dryer
25 sand lime brick cars, 3 ft. by 5 ft. top.
2 transfer cars all in good condition.

MORGAN BRICK CO.
Norristown, Pa.

For Sale at a Bargain

Soft mud brick plant, one Hercules brick machine made by Horton Mfg. Co., one crusher, one sander, one clay elevator, one boiler, one engine, pulleys, belting, shafting, etc.; 11000 pallets, 10x36 inches; Racks for 80,000 brick; kiln doors, grate bars, barrows, trucks. Everything necessary for brick yard. Capacity 20,000 brick daily. Only two million brick have been made on this machinery which was bought new. Address, J. S. COLLINS,

Frankfort, Ky.

FOR SALE CHEAP

Chambers Augers Brick Mackine; Chambers Automatic cutter and table and wet clay pan made by Chambers Bros., Philadelphia, Pa.

Length of brick machine and tables 51 feet as follows: Gearing with fly wheels, 81 ft., long machine 7 ft., long 22 tables with 2 belts and automatic head brick cutter in the center 36 ft. long making full length 51 ft. long. Will make twenty-five to thirty-thousand bricks per day.

WET CLAY PAN.

Two crushing weels 12 ft. 8 in., each around 10 in., thick or wide table that wheels run around 23 ft., around outside of wheels lenght of iron frame east to west at the bottom 12 ft. wide north to south 7 ft. 6 in., 13 ft. 8 in. high from bottom of iron frame work to top fly wheel.

TRUCKS

70 Trucks, 2 ft. Gage all iron for hot air Dyer.

SAMUEL GERSON & CO.
Coatesville, Pa.

BRICK YARD FOR SALE

Containing 14½ acres of best grade clay and sand for brick making purposes; equipped with all brick making machinery. Capacity 30,000 brick per day. Now being operated by owner who will sell on account of other business requiring his attention; river front location; boat freight rates; contract for 500,000 brick goes with property, original cost of property $11,000. Will sell for half. Reasonable terms. Investigate quick.

Address Box 343. Kaukauna, Wis.

FOR SALE

One seven foot Wet Pan, with engine attached, in good condition. A bargain. Address

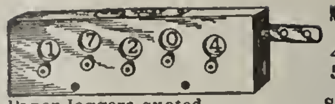
H. B. WEAVER,
905 Hamilton St., Allentown, Pa.

FOR SALE

150 Iron Flat Trucks for Cement, Tile or Brick Yard.
One 70-inch Buffalo Forge Fan.
One 18 H. P. Heine Boiler
Two Freight Elevators

The above machinery is in good condition and at a very low price. S. KRUG WRECKING CO.,

Nebraska City, Neb.



No better made, cut from $8 and $10, to
4 Wheel, $3 00
5 Wheel, $3.25
Guaranteed.
Paper Joggers quoted. **Sold by all dealers**
R. A. HART, 41 White St., BATTLE CREEK, MICH

FOR SALE

One four-mold Ross-Keller Brick Press in good working condition. Has only been used one year.

Chisholm, Boyd & White Co.,
57th and Wallace Sts., Chicago.

FOR SALE

One 16x20 Atlas Engine; one J. D. Fate Brick and Tile machihe; one 60x16 Boiler; one Andrews 3-mold Dry Press, Pug Mill, Roller Crusher; one Tile Elevator, Hoisting Drum; Deep Well Pump. All in good working order. Address

Redfield Brick and Tile Works,
Redfield, Iowa.

PLANT FOR SALE

Very valuable Brick and Tile property on James River, Va., complete stiff mud plant, 25 thousand capabity, practically new. Brand new soft mud outfit, including steam dryer, 50 thousand capacity; automatic conveyors, new and commodious dwellings. Not a better equipped yard in the state. 20 acres or more plastic red clay, admirable for brick and drain tile. Eight rapidly growing cities furnish market for bricks net $7 00 at kiln. Practical monopoly of best market in U. S. for drain tile to net $20.00 per thousand for 4 inches Immense demand and no factory in 200 miles Cheap fuel and labor; can operate with steam dryer year around Improvements have cost $16,000, but I am not a brickmaker and to the right party will sell low and easy payments W. L. JONES,

Lock Box 5, Williamsburg, Va.

FOR SALE

Second-hand four and six mold Dry Press at a bargain. Can be seen under belt and making brick. Address,

FERNHOLTZ BRICK MACHINE CO.
St. Louis, Mo.

FOR SALE OR LEASE

Clay products plant. Established business. Running concern in one of the best cities in Ohio

Address A. B. care Clay Record.
Chicago, Ill.

FOR SALE

I have a Brick and Tile Plant costing $20,000, Electric Power, Steam Dryer. Make soft mud and stiff mud brick and drain tile. I want a man with a few thousand dollars to take one-half interest in the business If you are looking for a good chance to get into business by investing at 50 cents on the dollar, address J. J. MILLER,

Benton Harbor, Mich.

FOR SALE CHEAP

One Bullick 100 H. P. Motor, one 9 foot Raymond Pug Mill, one 18 H.P. Gasoline Engine. All nearly new. Address

KIAMENSI CLAY CO., Newport Del.

FOR SALE

New Sand Lime Brick Hardening Cylinder, 6 feet diameter by 68 feet long. One removable head. Immediate shipment.

FRANKLIN BOILER WORKS CO., Troy, N.Y

GOOD BUSINESS OPENING

W;ll sell an interest on attractive terms, in prosperous soft mud brick plant to reliable person, experienced and competent to take entire management and conduct the business. No competing yard. Plenty of business.

Big Horn Brick Company, Cody, Wyo.

WANTED

Foreman for a stiff mud face brick factory in Penna. Address giving references and stating salary expected. X-Y-Z, care Clay Record, Chicago.

WANTED

Sorter for a stiff mud face brick factory in Penna. Address giving references and stating salary expected. X-Y-Z, care Clay Record, Chicago.

BRICK PLANT FOR SALE

One of the most complete stiff mud brick plants in Pennsylvania, located on the Pennsylvania Railroad near Philadelphia. Daily capacity, 30,000. Chambers Machine, nine tunnel hot air dryer, eight round down draft kilns, one Dutch kiln, railroad siding to kilns. All equipped with the most up-to-date appliances. Can manufacture bricks at the lowest possible cost. Will sell at a sacrifice, and on easy terms. Good reasons for selling. A rare opportunity. Address S. C., care Clay Record, Chicago

REBUILT ENGINES AND BOILERS

The cleanest and most thoroughly rebuilt. All our own and in stock. Not scattered everywhere and merely listed.

ENGINES—Corliss—20x48 Wheelock, 20x42 Allis, 18x42 Hamilton, 16x42 Lane & Blodley, 14x36 Lane & Bodley, 14x24 Wright, 12x30 Allis, etc.

ENGINES—Automatic—16x32 Buckeye, 15x14 Erie, 14¼x16 Buckeye, 14½x14 Ball & Wood, 13½x15 Taylor, 13x16 Erie, 12x14 Green, 12x12 N. Y. Safety, 10x10 Fisher, 9½x12 Leffel, 8x10 Allfree, etc.

ENGINES—Throttling—18x24 Erie, 16x20 Chandler & Taylor, 16x18 Erie, 14x24 Atlas, 13x16 Chandler & Taylor, 14x14 Lewis Vertical, 10x16 Owens, Lane & Dyer, 10x12 Industrial, 9x12 Ajax, 8x12 Climax, 7x12 H. S. & G., 6x8 Clark, etc.

BOILERS—Stationary—72x18 High Pressure, 72x18 Standard, 72x16, 66x16, 60x20, 60x16, 54x16, 54x14, 54x12, 48x16, 48x14, 44x14, 40x12, 40x9, 36x16, 36x10, etc.

BOILERS—Fire Box—80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 h. p., etc.

BOILERS—Vertical—50, 40, 35, 30, 25, 20, 16, 12, 10, 8, 5 and 3 h. p., etc.

HEATERS—All sizes, open and closed.

PUMPS—All sizes, single and duplex.

Saw Mills, Lath Mills, Edgers, Cut-Off Saws, Tanks, etc. Write for list.

Also fu'l assortment of new machinery.

Sole manufacturers of the celebrated **"Leader" Injectors and Jet Pumps.** Send for circulars.

The Randle Machinery Co.

1732 Powers Street **Cincinnati, Ohio**

"A CHANGE IN FLUES MAKES THE DIFFERENCE IN DRYERS"

POTOMAC BRICK COMPANY
1413-G Street, N. W.
ELLIOTT S. MORSE, Gen. Mgr.

Washington, D. C., March 19, 1909.

THE KING ENGINEERING CO.,
Richmond Va.

Gentlemen:—Our No. 1 10-tunnel Sharer Radiated heat dryer before it was remodeled by you gave us an average of 55 cars per day of dry brick.

You completed the reconstruction of this dryer the latter part of January last. This day we have examined our records and find that our daily average now is 80 cars dry brick.

Yours very truly,
(Copy) ELLIOTT S. MORSE.

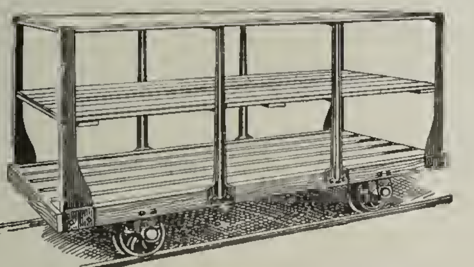
That which we have done for the above Company we can do for You. We can remodel **any** Radiated heat dryer **and increase its capacity** from 15 to 30 per cent.

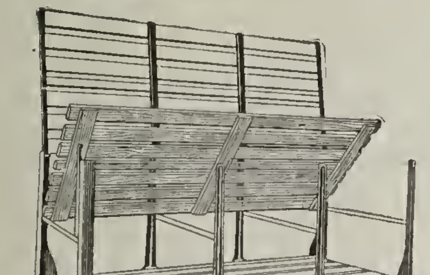
THE KING ENGINEERING COMPANY

RICHMOND, VA.

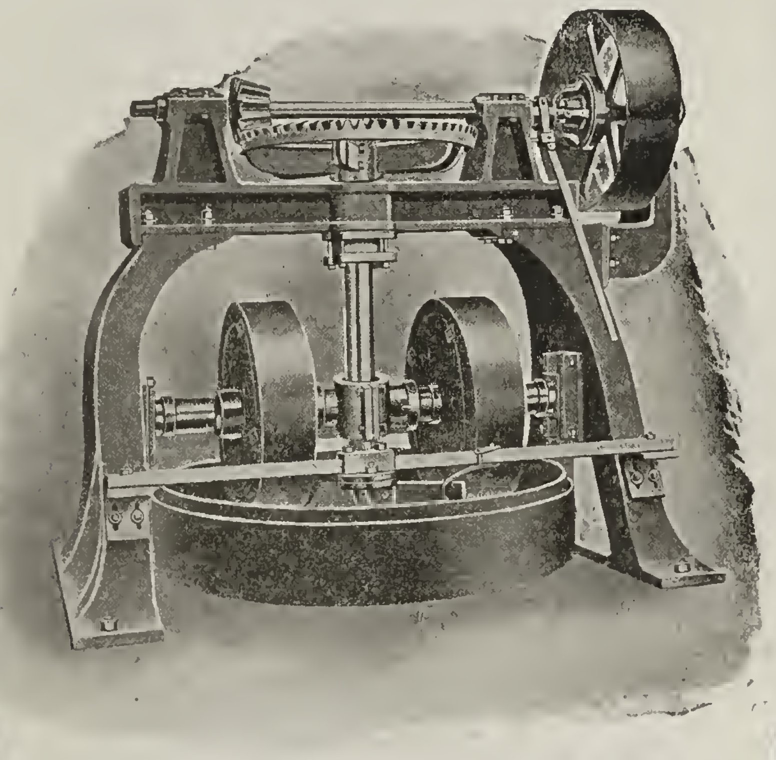
The Lightest Running Dryer Car Made

having a dust proof roller bearing box made of steel. No oil needed. Write for description and prices





Vulcan Iron Works MASON CITY, IOWA



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BUILDERS OF

Pittsburgh Standard Dry and Wet, Revolving and Stationary Grinding Pans for Brick, Cement, Sand, Terra Cotta and all kinds of Refractory Materials.

ROCK AND ORE CRUSHERS

When writing for prices state kind of material and capacity required.

Eastern Offices
Stephen Girard Building, Philadelphia, Pa.

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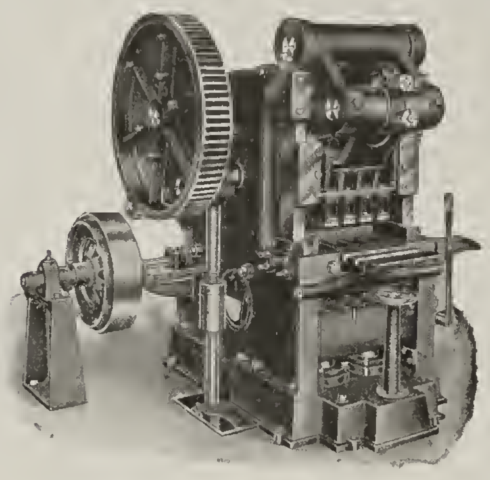
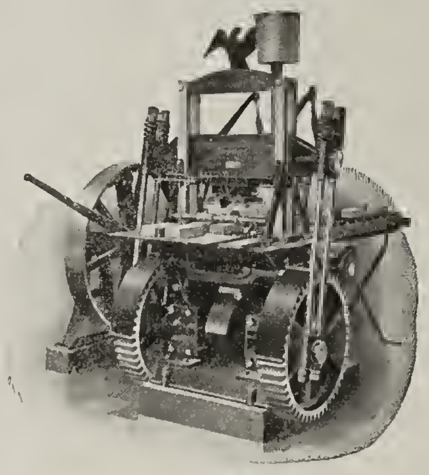
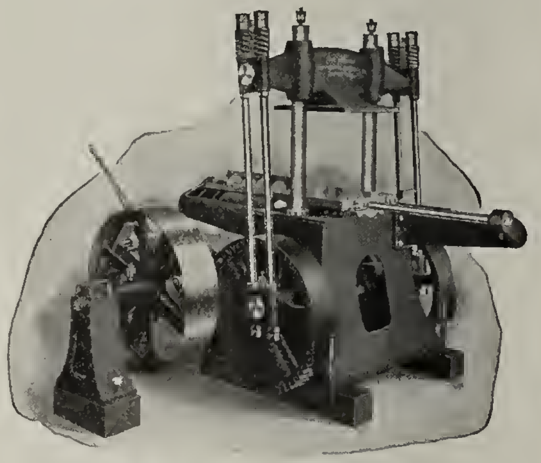
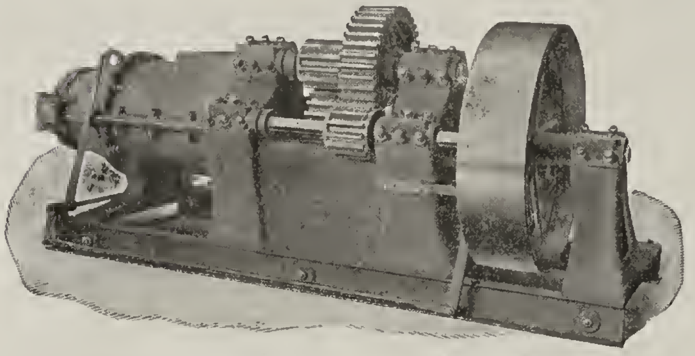
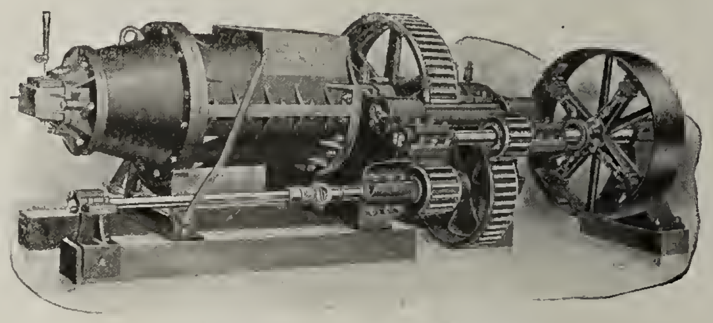
BUILT RIGHT RUN RIGHT
BUCYRUS OHIO, U.S.A.

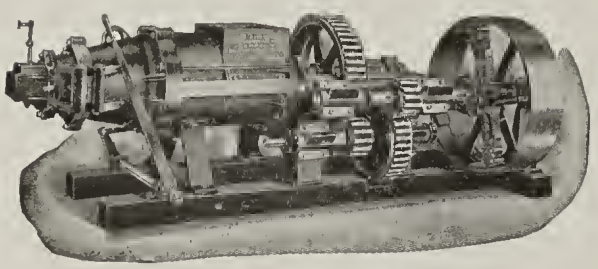

Model "B" Dry Press

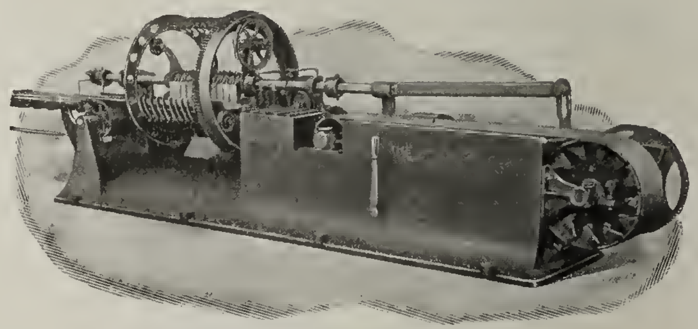

Eagle Repress

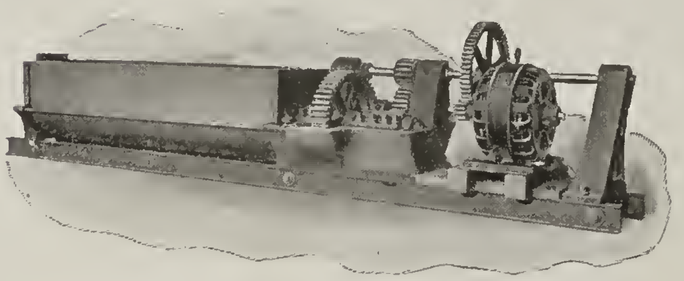

Roofing Tile Press

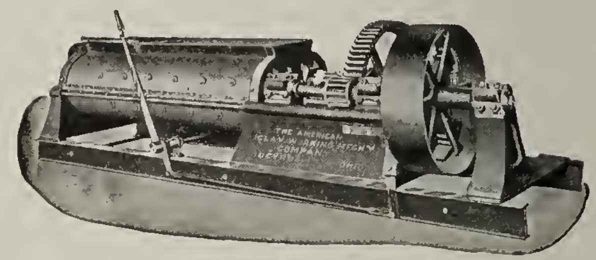

No. 65 Auger Brick Machine


Special Giant Brick Machine


No. 2 Giant Brick Machine


No. 83 Automatic Cutter


No. 51 Electrical Driven Pug Mill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We Build Every Machine and Every Appliance Needed for the Manufacture of Every Class of Clay Products by Every Process

THE AMERICAN CLAY MACHINERY COMPANY

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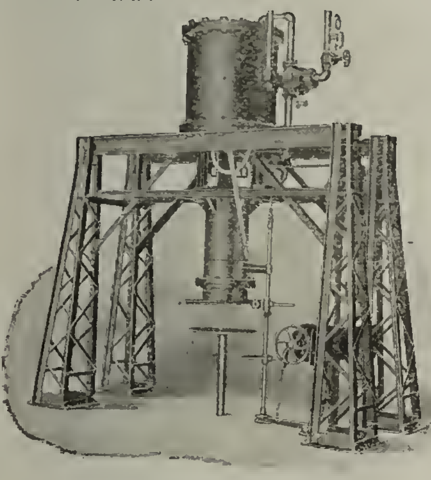
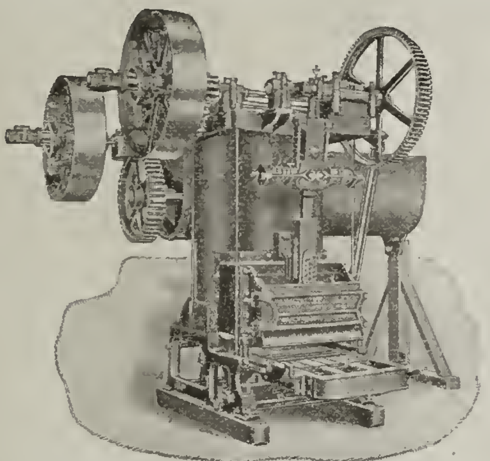
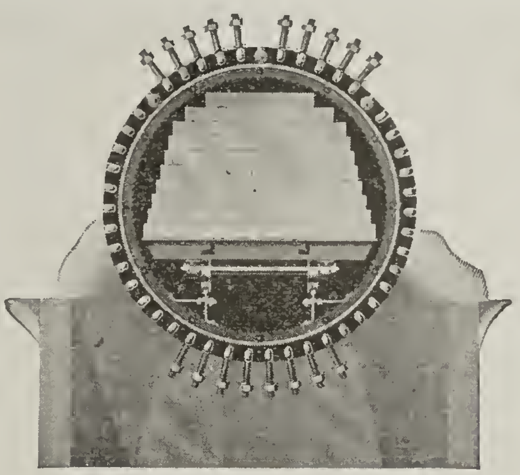
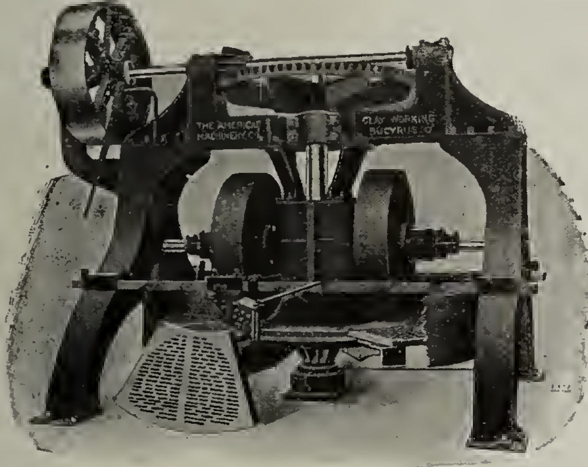
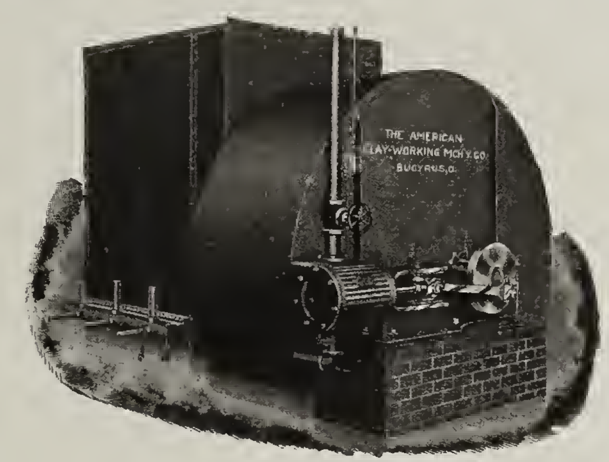

Sewer Pipe Machinery


Upright Stock Brick Machine

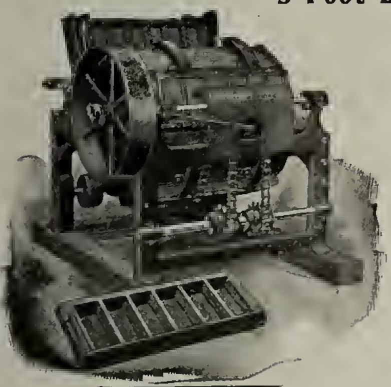

Sand-Lime Brick Machinery

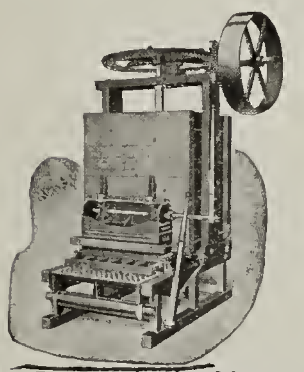


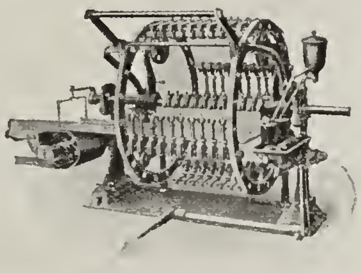
9 Foot Dry Pan



Blower Dryer Apparatus


Mold Sander


6H. P. Brick Machine


No. 62 Hand Power Cutter

Dry Cars

Disintegrators

Winding Drums

We are Much the Largest and Much the Most Extensive Manufacturers of Much the Best Clay Working Machinery in the World

Fire Brick——Fire Clay

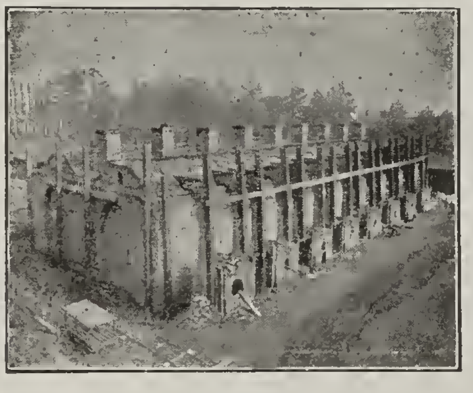
AND FIRE CLAY PRODUCTS

Manufactured out of highest grade Missouri semi-flint fire clay.
A large stock of Number One brick and shapes always on hand.
Let us quote you prices and we will save you money.
Samples sent upon request. Address

Mexico Brick & Fire Clay Co.

MEXICO, MISSOURI

Something New In Brick Kilns and Dryers



The Lennis Double Chamber Up and Down Draft Brick Kilns and Direct Heat and Hot Air Brick Dryers show many new features that make them superior to all others. Economical, durable and strong in construction and operation, having many points of dvantage that appeal to practical brickmakers. Patented April 14, 1903 and September 8. 1903 Brick plants installed and put in operation. Write for booklet. Correspondence solicited.

F. W. DENNIS,
145 Water St., Norfolk, Va.

Approved and Labeled

Fire! Fire!! Fire!!!

Extinguishers

Protect your Home, Business, Factory

Insurance Reduced. Child can Operate. Made of Copper. Will Last a Lifetime.

Chemical charges can be procured at any drug store

Write today; don't wait; delays are dangerous.

O. J. Childs Company

Sole Manufacturers Utica, N. Y.

AMERICAN RING-HAMMER PULVERIZER

Two Models, one for Clay, Shale, one for Rock

Will pulverize from 4 mesh to 200 mesh, 1 to 50 tons per hour, according to size of machine, fineness required, kind and condition of material.

30% to 60% less speed, and 25% to 50% less power, due to the RING and its utilization of CENTRIFUGAL FORCE.

We make six sizes and every machine guaranteed to do the work which it is contracted to do when sold.

Revolving Screens Air Separators
Ask for Circulars and Information

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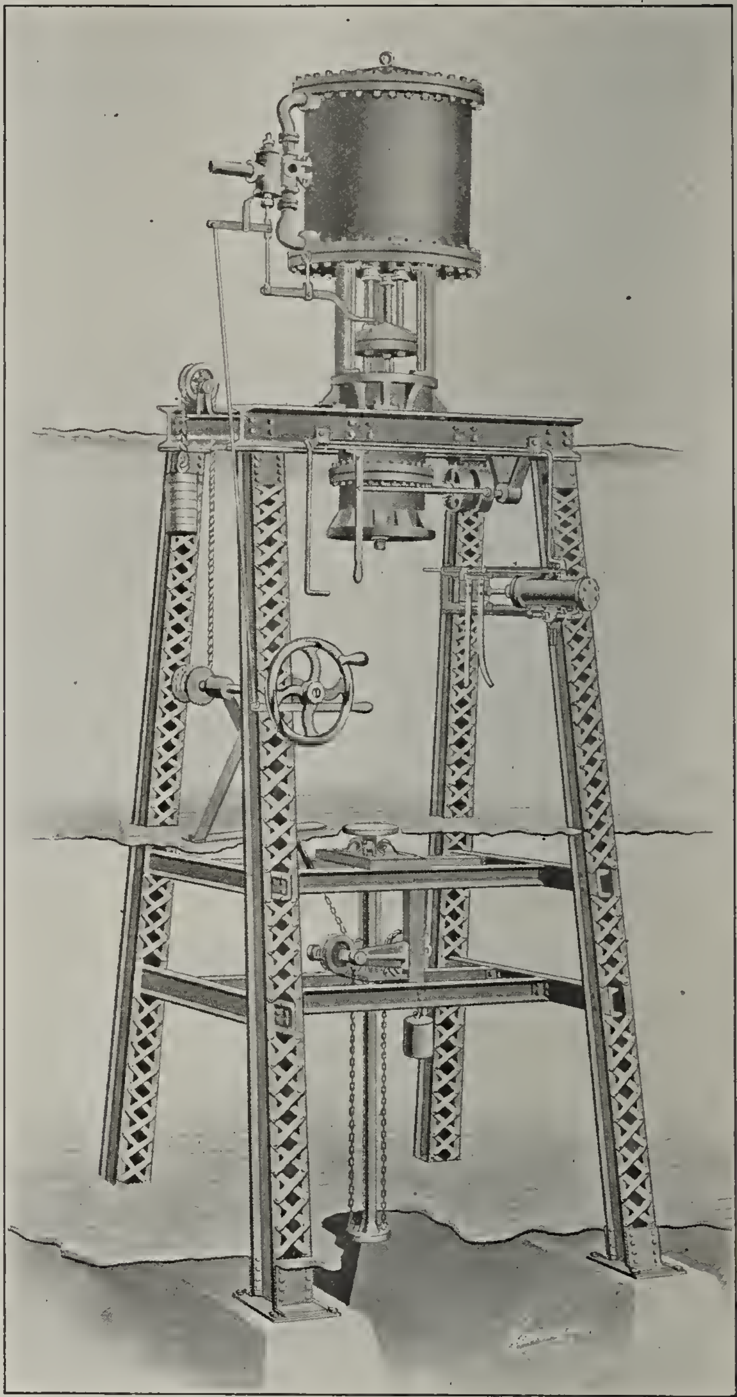

44 X 20 SEWER PIPE PRESS

SEWER-PIPE MACHINERY

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THE TURNER, VAUGHN & TAYLOR COMPANY

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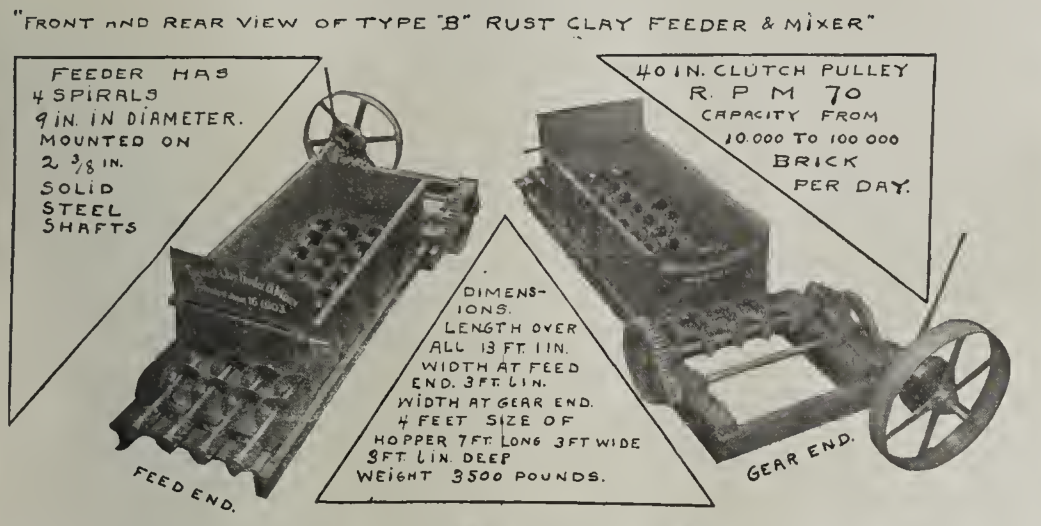
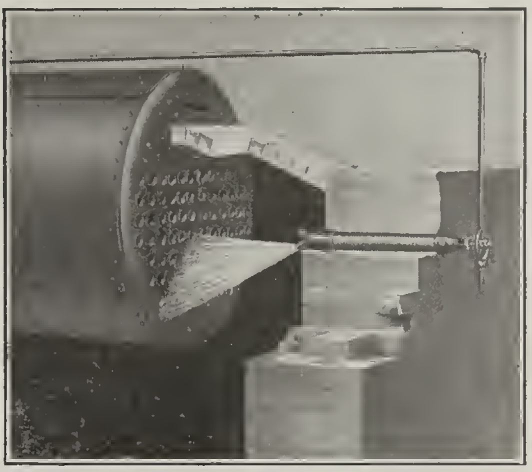

"FRONT AND REAR VIEW OF TYPE "B" RUST CLAY FEEDER & MIXER"
FEEDER HAS 4 SPIRALS 9 IN. IN DIAMETER. MOUNTED ON 2 3/8 IN. SOLID STEEL SHAFTS
40 IN. CLUTCH PULLEY R. P M 70 CAPACITY FROM 10.000 TO 100 000 BRICK PER DAY.
DIMENSIONS. LENGTH OVER ALL 13 FT. 1 IN. WIDTH AT FEED END. 3 FT. 6 IN. WIDTH AT GEAR END. 4 FEET SIZE OF HOPPER 7 FT. LONG 3 FT WIDE 3 FT. 6 IN. DEEP WEIGHT 3500 POUNDS.
FEED END.
GEAR END.



Don't Let Your Profits Run Away

We can save you from $500.00 to $1,000.00 per year, through the use of this modern Clay Feeder.

Write today for our latest catalog fully describing this new **Clay Feeder and Mixer.**

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ANDRUS BRICK PRESS
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A Manual for all Engaged in the Manufacture of Articles from Clay

JUST OUT : : PRICE $2.00

Do Your Brick Turn White?

HERE IS THE REMEDY.

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Carbonate K.B. C.F.H. of Barytes

The only preventative for scum and discoloration on facing Brick and Terra Cotta; neutralizing the Sulphate of Lime in the Clay and Water.

Circulars and Particulars on Application.

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They Never Fade

Twenty long years of time and weather have tried out Ricketson's Famous Red Brick" Brand

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for Mortar, Brick, Cement, Stone, etc., Proves it Absolutely Permanent. Red, Brown, Buff, Purple, Black.

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COLORING

Haigh's New System of Continuous Kiln

Arranged to Suit all Locations

These Kilns can be seen burning Roofing Tile, Drain Tile, Dry Pressed Facing, Fire, Paving and Common Building Brick

Points of Superiority: Cheapness in construction. Easy to understand and operate. Perfectly free from any nuisance. Will save more than one-half of the fuel used on other Kilns. Specially adapted for Utilizing Waste Heat for Drying Purposes, and which is being done most successfully

Address, H. HAIGH, Catskill, N. Y.

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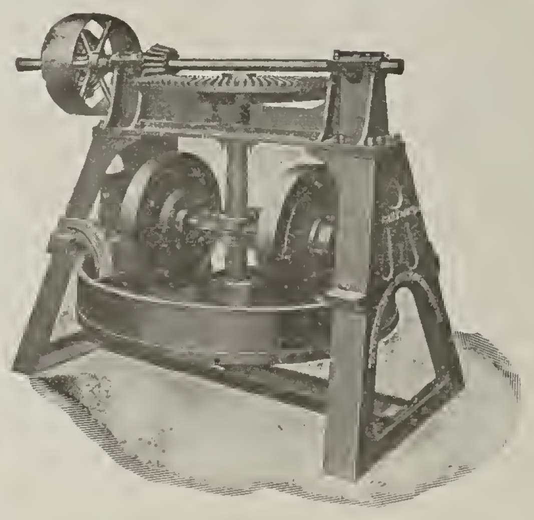

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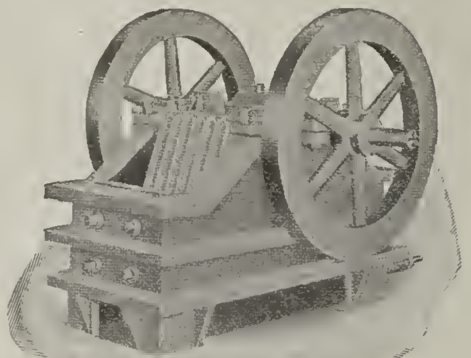

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Masssive and well proportioned.
Best material.
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This Crusher is specially designed and adapted for use as an auxiliary to the dry pan.
Capacity 10 to 30 tons per hour.
Simply constructed and the strongest machine of the kind on the market.

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For testing paving brick.
Built to the standard specifications of the N. B. M. A.
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The P. HAYDEN S. H. CO., Foundry and Machine Dept.

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The American Sandstone Brick Machinery Co.

INCORPORATED APRIL, 1902
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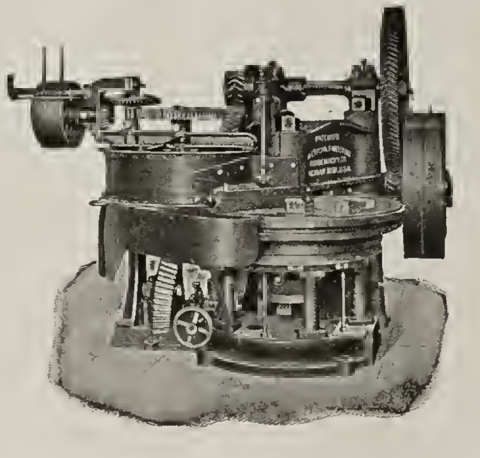

Improved Saginaw Rotary Presses

Are now being built with extra table for making fancy brick, on which double pressure is exerted.

Don't confuse our Practical System with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our plants are **installed under the supervision of Practical Engineers who know how Sand-Lime Brick should be and can be made.** We have **Practical Plants Running Successfully** to show to prospective investors.

WE ARE NOT SCIENTISTS

We **Produce Results,** because we are the **Oldest Practical Sand-Lime Engineering Company Doing Business in the United States,** and **we defy contradiction.**

THE BURNER WITH THE VIBRATING FLAME

SCHURS PERFECTED OIL BURNERS

DESIGNED ESPECIALLY
FOR BURNING BRICK
AND ALL CLAY WARE
Patented July 21, 1908

No. 2 BURNER

Especially Adapted to Common Up-Draft Kilns

By the adjustment of the tip a vibrating flame is produced which forces the gases to the center of the kiln and back to head. **insuring a uniform burn** The SCHURS is the most durable and most economical Burner made. Saves labor and fuel, and will atomize the heaviest oils.
Write for booklet containing full information.

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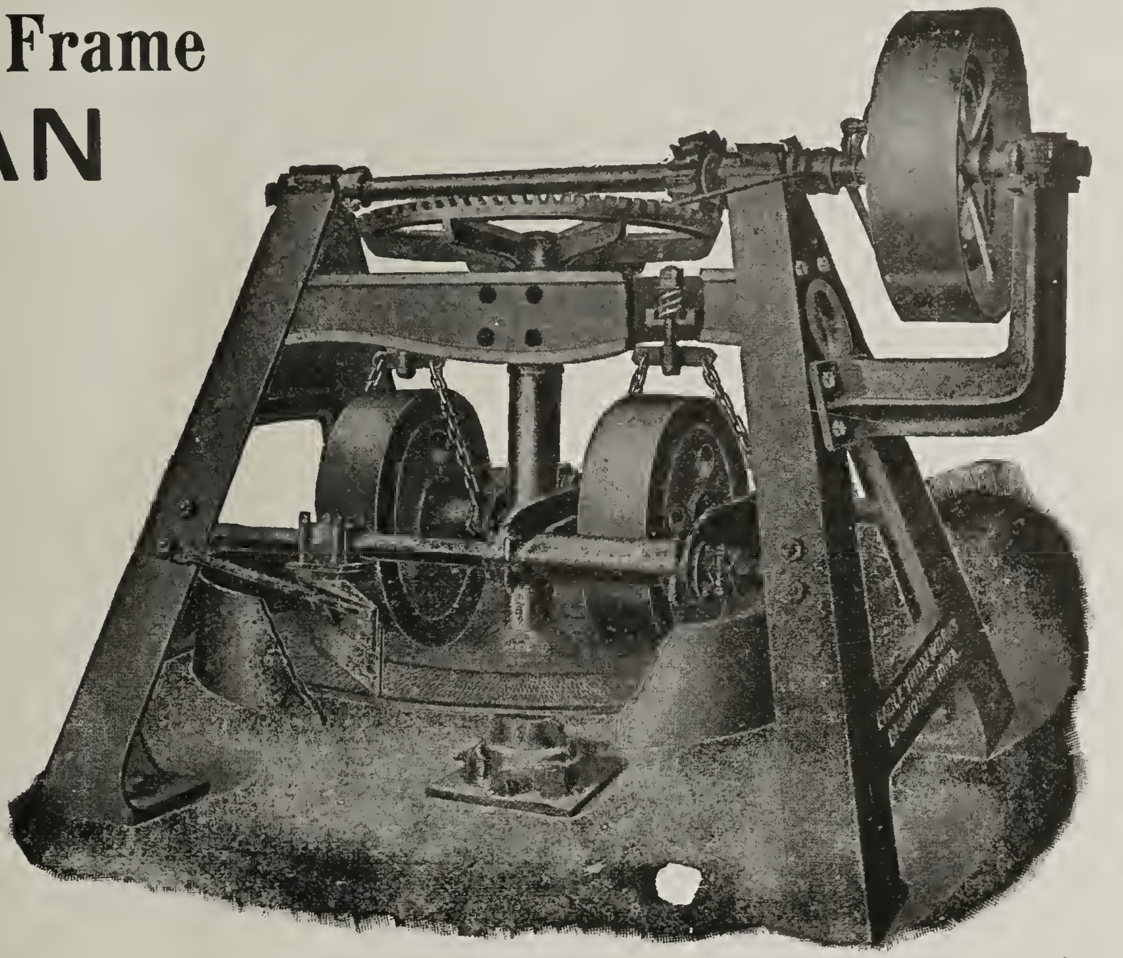
Nine Foot Iron Frame

DRY PAN

With Independent and Suspended

MULLERS

A well-tried and proven Success.



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Steel Brick Pallets

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The only Steel Bench Pallet that can be stacked without slipping. They Interlock. Light, Strong, Rigid. (Patented.)

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MADE EXCLUSIVELY BY

THE OHIO GALVANIZING & MANUFACTURING CO.

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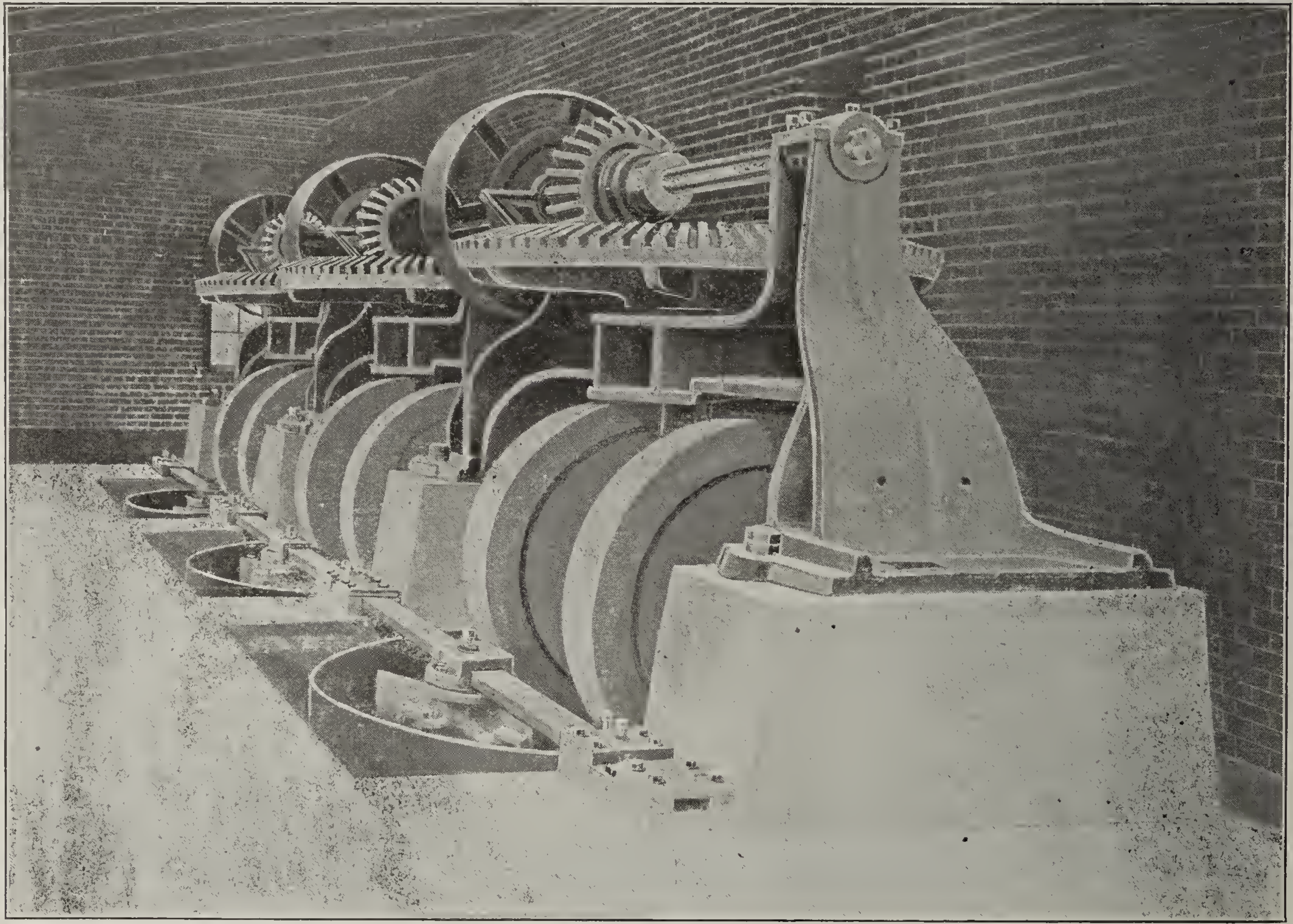
Our Dry and Wet Pans are worth your investigation

We build them eight, nine and ten feet in diameter, weighing 30 to 50,000 pounds. They have great crushing and screening capacities



We also manufacture complete equipment for Sewer Pipe, Brick, Terra Cotta Drain Tile and Fire-Proofing Works

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WILSON KILN & DRYER CO.
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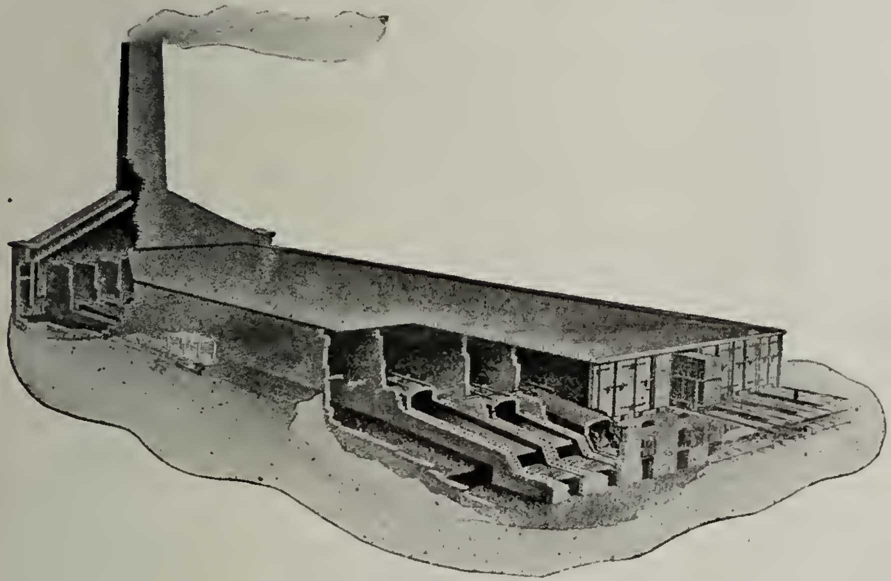
Wilson Kilns and Dryers

Built by Wilson Kiln & Dryer Co , Capacity 100,000 Brick Per Day.

Patent July 8, 1902



Patented March 3, 1903. No. 721988

Why are we always busy?

Because we study the brick business and build kilns and dryers to suit the conditions.

Our smoke-consuming furnaces, and continuous waste heat system, kiln floors, and test kilns have been in every day use for several years and have proven very satisfactory.

Our Brick Kilns are modern in every way, and have proven successful wherever built.

Our Radiation Heat Dryer has more radiating surface than any other dryer in use.

The Kilns and Dryers are very economical in construction and operation. We believe we have the most satisfactory Kiln and Dryer system to produce results on the market.

Wilson Kiln & Dryer Co.
West End Trust Building
Philadelphia, Pa.

PAUL FUCHS

Manager of the Excelsior Granite Brick Co. -:- Specialist for the Sand-Lime Brick Industry

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Inventor of a New Process for Making "GRANITE BRICK"

My system enables the manufacturer to turn out a sand-lime brick of a compression strength of 9,000 pounds per square inch from proper raw materials. Send in a one-pound fair average sample of your sand and a one-pound sample of your lime for examination.

Porcelain Enamel for Clay Brick

Forward, express charges prepaid, ten brick for testing purposes.

Special Enamel for Sand-Lime Brick

Send in as many brick as colors wanted and specify colors desired.

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611 CARMEN AVE. Chicago, U.S.A.

HANDLE YOUR CLAY WITH ONE MAN AND

The Thew Steam Shovels

Made in Four Sizes. Mounted on Car Wheels or Traction Wheels.

Type No. 1 Shovel—Geo H. Clippert & Bro., Detroit, Mich.

Especially adapted for brickyard requirements. The shovel operates in a complete circle, enabling material to be delivered at side or in rear at will. The Dipper is hung from a horizontally moving carriage and can be adjusted to cut to any desired level.

: : Only One Operator Required.
Wire Cables used instead of Chains.
Strictly First-Class in Every Detail.

Economical for brickyards 30,000 to 40,000 daily capacity.

Operated by one man for outputs up to 125,000 brick per day.

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THE THEW AUTOMATIC SHOVEL CO.

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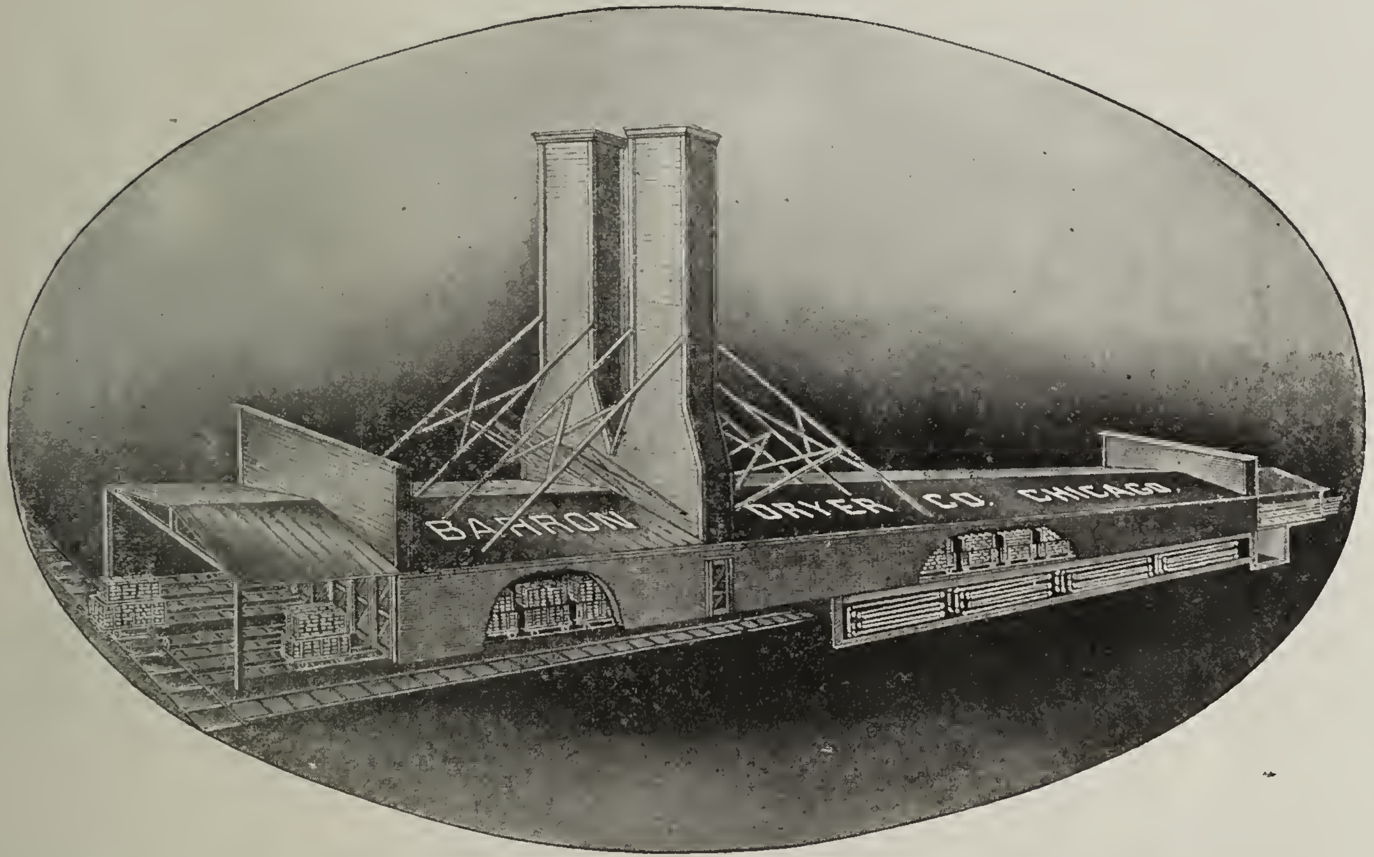
BARRON DRYER COMPANY

Established 1879

MANUFACTURERS, PATENTEES and BUILDERS of the

CHICAGO IRON CLAD DRYERS
BARRON'S TENDER CLAY DRYERS



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CASTINGS, FORGINGS, PIPE, VALVES, FITTINGS
RAILS, SPLICES, SPIKE, STRUCTURAL MATERIAL

OFFICE AND SHOPS **18 SLOAN STREET** ON C. & N. W. RY. **CHICAGO**

THE "MARTIN" CLAY-WORKING MACHINERY

IS KNOWN THE WORLD OVER FOR

ITS SIMPLICITY, DURABILITY AND

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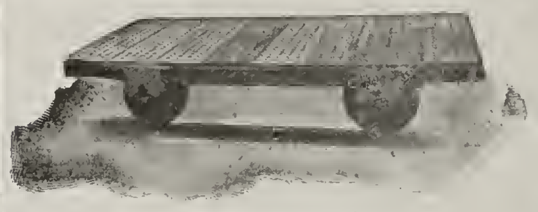
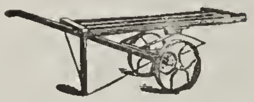
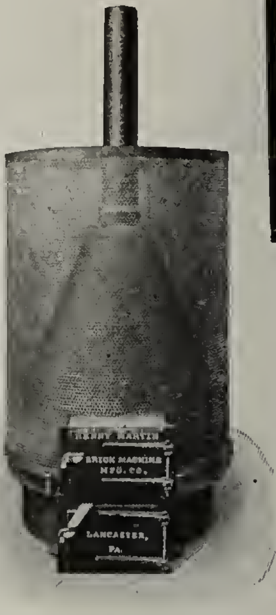


DRYER CARS

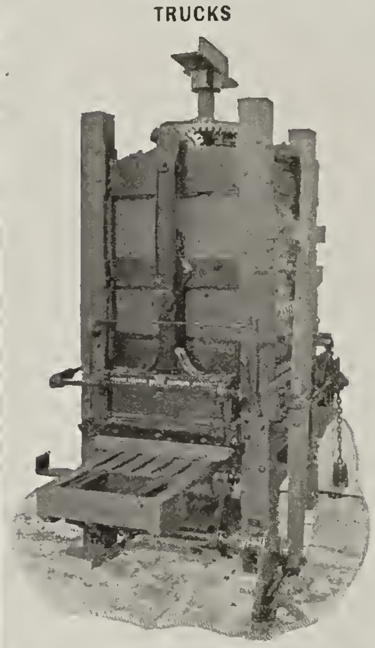


TRUCKS

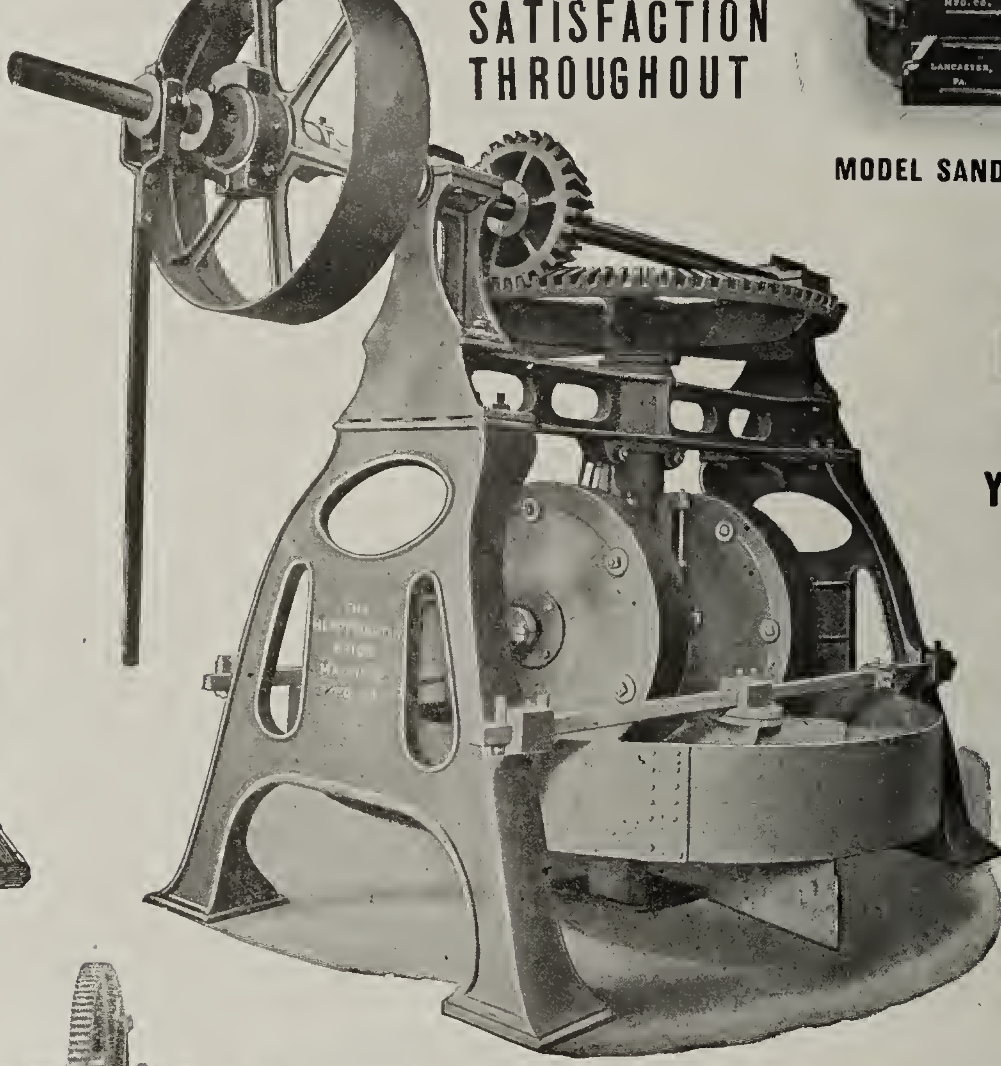


MODEL SAND DRYER

WE GUARANTEE OUR MACHINERY



HORSE POWER MACHINE



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YARD SUPPLIES

OF ALL KINDS BUILT RIGHT

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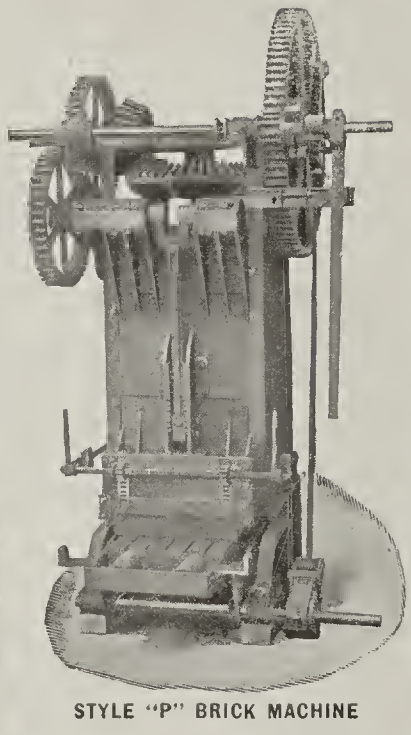
WE BUILD DRY OR WET PANS 5-7 OR 9-FT. WRITE US.



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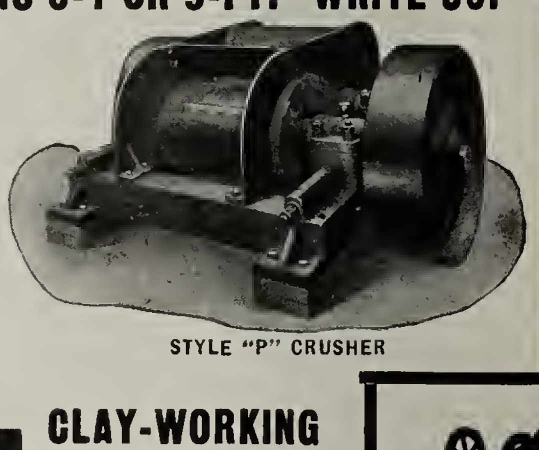


STYLE "P" CRUSHER

MARTIN

CLAY-WORKING ENGINEERS & MACHINERY EXPERTS

LANCASTER, PENNA., U. S. A.

THE "MARTIN" STEAM BRICK "DRYING SYSTEM"

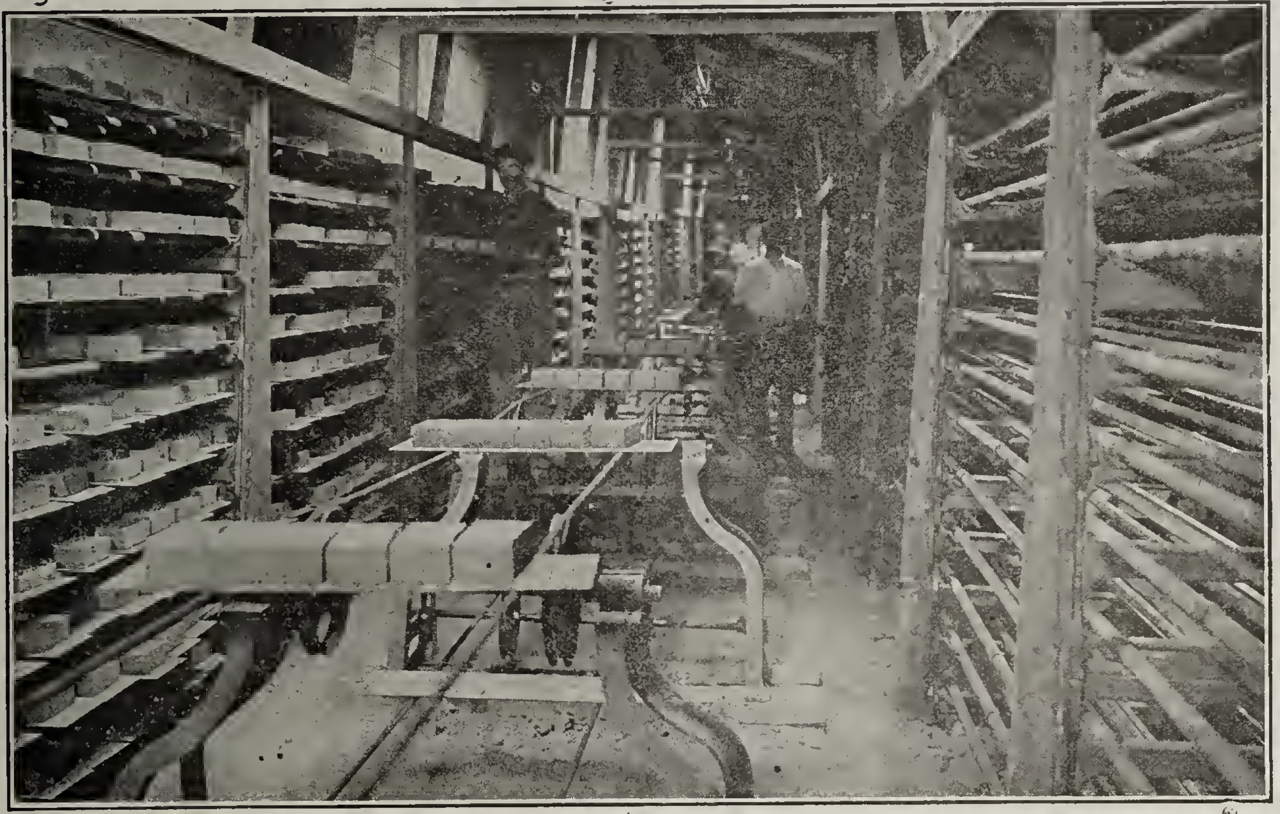
PATENTED

February, 22d, 1898.	No. 599509
October 10, 1905.	No. 95520
November 14, 1905,	No. 804489
May 26, 1908.	No. 888831

This Dryer, and the design in arranging it, are under the protection of the United States Government by virtue of patents granted. Patents have also been taken out in all the principal foreign countries. We are the sole owners and control these important patents and have authorized NO ONE to manufacture or sell the "MARTIN"

RACK PIPE STEAM BRICK DRYERS

☞ YOUR BRICK DRY OVER NIGHT ☞



☜ LABOR SAVING THROUGHOUT ☜

ADAPTED FOR SOFT-MUD OR STIFF-MUD BRICK

SUPERIOR IN EVERY RESPECT TO ANY OTHER SYSTEM—Labor Saving Throughout. Dispenses with Truckers and car Pushers. Pallets Automatically Return to Brick Machine. Quick to install and low in price, and takes up very little Yard room.

The sale and construction of the "Martin" Rack Pipe Steam Brick Dryer is under the direction supervision of the Factory Office at Lancaster, Pa.

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Silicate Brick Made by the "Division Method" Patented

THE PHILADELPHIA OPERA HOUSE

Built by Oscar Hammerstein and called the finest Opera House in the World. This beautiful building is faced with over 500,000 of our WHIE SILICATE BRICK, made under our patented process. These bricks were also used to line the wall at back of stage and also for the stairways.

The building seats 4,100 people and measures 240 feet on Broad Street and 16[illegible] feet on Poplar Street

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We challenge any one to make as good a brick as we do by our process, and will allow him twice our cost.

The factory we built last year at Washington, D. C., is pronounced the most compact and cleanest known, and the product the finest brick produced.

WE CAN DO AS WELL FOR YOU.   ASK US ABOUT IT AND LET US SHOW YOU

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Engineers and Contractors for Silicate Brick Factories
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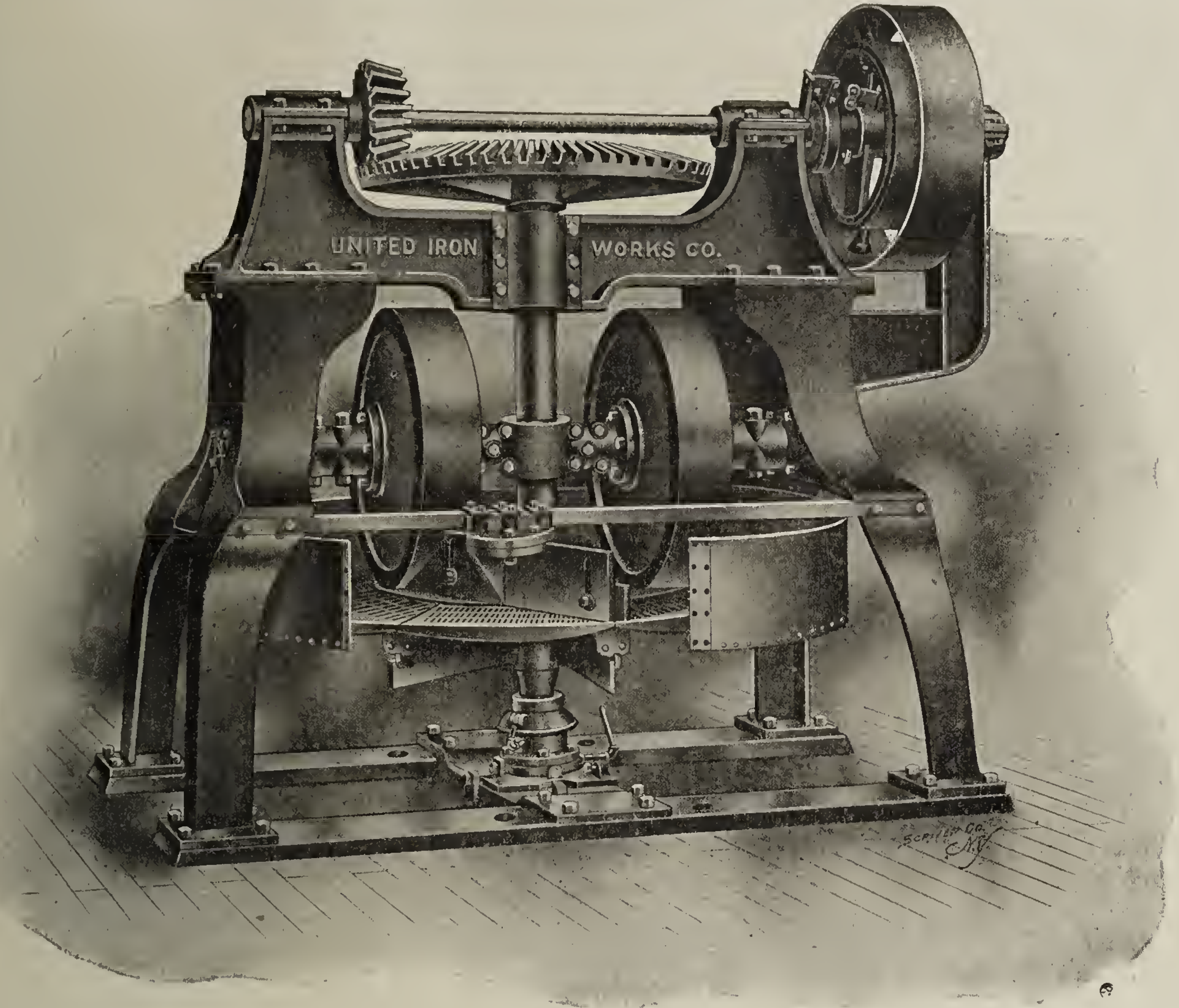

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"Answering yours of the 19th instant; We are pleased to state that the dry pan which we purchased of you about a year ago has given entire satisfaction. We consider it one of the best, if not the best, dry pan manufactured and shall, indeed, be pleased to recommend it to prospective purchasers of such machinery.

Yours truly,
WESTERN STATES PORTLAND CEMENT CO."

And they Backed up their statement by ordering recently THREE MORE Pans from us

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Electric Side Dump Car.

No. 146
Ball Bearing Turntable. Made in sizes
from 4 ft. to 11 ft. in diameter.

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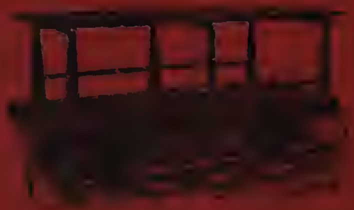
TURNTABLES, TRANSFER CARS, DRYER CARS, TRACK, SWITCHES, BRICK PALLETS.



NO. 128
Heavy Double Deck Car
Patent Malleable Iron Uprights

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